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Original Communications.

*THE PATHOLOGY AND TREATMENT OF CHRONIC VARICOSE ULCERS OF THE LEG.**

BY ERNEST LAPLACE, M.D., LL.D.,
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Chronic varicose ulcers of the leg form a class of cases which not only haunt the hospital wards, but are a burden and lasting reproach to the surgeon. Only those who have dealt with a great number of these cases can realize the amount of careful treatment they demand in order to reach any degree of improvement, and only these can realize the disappointment and discouragement that follow a return of the trouble soon after the improvement. In order, therefore, to apply the rational treatment to these rebellious sores, we must first consider their pathology.

The varicose ulcer is appropriately named such because it depends for its existence upon a serious disturbance of the superficial circulation of the leg. This disturbance results from the dilated and weakened condition of the veins, producing a certain amount of stasis, distending the skin, causing an

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edema, which requires a very little traumatism to produce an excoriation, which is the starting-point of the ulcer. If we inquire as to the initial cause of varicose veins we are confronted with a very obscure problem in pathology, and can only say that the walls of these veins are weakened by a process of malnutrition, resulting from an impaired condition of the whole system. The veins are weakened most probably in the muscular coat; the column of blood which they are intended to support excites a stronger pressure within their caliber than they are able to withstand, and as a result dilatation ensues. This dilatation renders the valves of the various veins almost useless in supporting the column of blood, and the veins acquire at times an enormous distention. An erect posture, and especially such vocations as require constant standing, tend to aggravate the pathological conditions just described, and as a result, from the time a slight traumatism or excoriation has removed the epithelium from the passively congested limb, an ulcer exists whose tendency is, by the impairment of the circulation, to grow constantly larger, and to be accompanied by venous hemorrhages.

The effort at repair on the part of Nature immediately results in the formation of granulations and cicatrization. On the other hand infection sets in, and suppuration complicates the case. In the acute stage these ulcers are soft and tender, and rather hemorrhagic, but after having existed for months or years the chronic irritation of the edges of the ulcer and the neighboring parts results in the formation of fibers within the surrounding cellular tissue, whereby a hard callous condition ensues. This hardening further impairs the circulation, so that in time the varicose ulcers possess a dull pink, glazed appearance, showing a great lack of blood about the parts. This scarcity of blood is due to the compression of the neighboring parts by the chronic inflammation which accompanies the ulcer.

For years, in hospital and private practise, I have given special attention to the treatment of these ulcers. The chief dependency has been the application of the modern principles of asepsis, combined with rest. Having treated the patient so as to improve his general condition, I proceeded under ether to remove freely the edges of the ulcer and scrape its surface, transforming the ulcer into a healthy wound. The patient was then kept at rest in a recumbent position so long as was required to entirely heal the ulcer. The wound was dressed at proper intervals so as to maintain it constantly in an aseptic condition. In a majority of instances, by dint of great efforts, I succeeded in healing the ulcer. The patient would be advised to wear an elastic stocking, and to keep off his feet as much as possible. It was impossible in many cases to follow this advice, inasmuch as most of the patients belonged to the laboring class. As a result, from use of the limb, I often found that the place where the ulcer was soon became congested, blue, and swollen, reproducing the same old ulceration. It is in these cases that both patient and surgeon feel so discouraged.

Analyzing these unfortunate cases, I find that the treatment of the ulcer was based on the proper principles. I removed the cause of the ulcer by placing the patient in bed, eliminating the passive congestion which accompanies the varicose vein. The ulcer was healed by removing the infectious element and transforming it into a healthy aseptic surface, whereon Nature was enabled to build fibrous tissue and cover it up with epithelial cells. So far everything was correct and the indications of treatment were properly fulfilled. But from the time that the patient was allowed to walk again, and the same original cause was again at work, it was natural that the effect should also be the same, and show itself in the return of the ulcer. The weak point in the treatment, therefore, was the fact that the varicose veins and their effects were not permanently eliminated. I believe that the removal of the cause—that is, the cure of the varicose veins—should be the initial step for the successful treatment of these ulcers, and therefore advise that all the veins of the leg be ligated and obliterated as the first step in the treatment. The treatment of varicose ulcers of the leg, acute or chronic, to-day should resolve itself into a radical cure of varicose veins of the leg, and as a result the ulcer will immediately take on a tendency to heal, and will require only ordinary attention to help the healing process. Furthermore, the cause being removed in the complete obliteration of all the superficial veins, the ulcers once healed remain permanently so, allowing the patients to attend to their work with impunity.

For the obliteration of the veins I have performed one of two different operations according to the nature of the varicose veins. In some instances the superficial veins of the

leg are persistently dilated, but the long and short saphenous veins are not distended. In this case a catgut ligature is applied to these veins as they enter respectively the saphenous and popliteal veins. This method was advised by myself in the year 1892, and has met with success in this class of cases. Inasmuch as these two veins drain the whole of the venous circulation, their ligature results in a simultaneous stasis and coagulation of blood within all these superficial veins. Their obliteration soon follows.

On the other hand, when other great masses of enlarged veins form on the limb, and do not affect the saphenous vein above the knee, I practise Schede's method, which consists in making a circular cut, about two inches below the knee and directly through the skin, separating all the veins as they present themselves, clamping them, and subsequently ligating them with catgut. The circular cut is then carefully sutured. This is the most effective method of stopping the superficial venous circulation and obliterating the veins, which hampered the process of healing.

These wounds, after the obliteration of the veins, heal most kindly when thoroughly aseptic, and from the first the operation exerts a beneficial effect upon the ulcers. They immediately acquire a more healthy appearance, and granulations set in which effectually build tissue, while the surrounding epithelium grows and covers the ulcer, completing the healing process.

The combination of an operation for the obliteration of the venous circulation and the proper local treatment of the ulcer according to modern surgical methods fulfil all the indications in this rebellious class of cases. Since I have adopted this method I have obtained very flattering results in the most obstinate, old and callous ulcers at the Philadelphia, Medico-Chirurgical and St. Agnes's hospitals during the last three years. A series of eighteen ulcers of the worst varieties healed and remained so. A detailed description of the cases would be rather tedious, since the principles involved in each one are precisely the same, and only require such modification as the peculiar location and character of the sore may demand.

I believe that syphilis and tuberculosis may complicate at times these varicose ulcers, hence we should never lose sight of the diathesis under which the patient may suffer, so as to eliminate it by the proper treatment before the surgical aspect of the case is undertaken. In syphilitic ulcers accompanied by varicose veins we have given a general mixed specific treatment in addition to a local application of a salve consisting of ammoniated chloride of mercury five grains to one ounce of vaselin.

When the sore had taken on a healthy appearance, and the tissue seemed comparatively free from specific poison, the operation upon the varicose veins was undertaken—not before. In tuberculous ulcers, complicated by varicose veins, a general tonic treatment was given consisting of the syrup of hypophosphites and a local application of iodoform powder. I always take care, however, to first remove all diseased tissue by the curette, and paring the edges of the sore. When the healing process, after the wound had become healthy in character, seemed slow, threatening to take a long time before the epithelium would spread over the edges and cover the surface, skin-grafting was practised, according to Thiersch's method. The granulating surface was thereby covered thoroughly with epithelium, and in the course of two or three weeks would be completely healed.

This process of skin-grafting consists in removing large strips of epithelium from the thigh in the following way: Having rendered the strip aseptic it is made tense by being supported between the thumb and the middle finger of the left hand; using an ordinary razor or sharp knife, the instrument put at an angle of 20° to the thigh and practising a see-saw motion, the epithelium is, if possible, removed without penetrating below the papillary layer of the skin. These strips of epithelium may measure one-fourth to one-half inch in width, and three, four or five inches in length, according to the necessities of the case. Aseptic gauze is applied to the spot whence the epithelium was removed and secured by a bandage; this will suffice as treatment for this excoriated surface. The spots of epithelium are made to cover the ulcer completely, and are secured in position by several thicknesses of sterilized gauze smoothly laid over the parts.

Should suppuration, however, set in, and the life of the grafts be in danger, this danger is overcome by the various layers of the gauze having been made detachable, so that when the dressing is removed all the layers of gauze can be taken away except the lowermost layer. In this way the growths are not disturbed. The secretion and pus can be removed effectually through this lowermost layer of gauze.

Peroxide of hydrogen will clean the wound thoroughly through this one layer of gauze, and the application of any antiseptic solution is made possible without disturbing this last layer. In this case it becomes necessary to repeat our antiseptic washing at least every day. At the end of a week or ten days it will be found that all of the grafts have adhered, whereas, should all the dressings have been removed when there was evidence of suppuration, usually on the third or fourth day, these grafts would have been sacrificed.

I believe this to be a very practical point, essential to success in a great number of cases. From experience I have found that it is not always possible to devote our best endeavors to maintaining an aseptic condition of the ulcers, especially if they have been grafted. A light bandage applied to the limb for a short while before the patient is allowed to get up suffices to complete the treatment of what has for a long time been a very distressing condition, both for the patient and for the surgeon.

THE VALUE OF DIPHTHERITIC ANTITOXIN IN THE TREATMENT OF MEMBRANOUS CROUP.

By L. I. Matthews, M.D.,
Joplin, Missouri.

In the preparation of this paper I have not thought it necessary to lengthen it by discussing the nature and cause of diphtheria or the propriety of using antitoxin in its treatment. If the value of any new remedy has been almost universally acknowledged by the profession, it is antitoxin in the treatment of diphtheria. The reduction of the death-rate in this disease after its employment has been so marked that one can hardly find a physician of standing who will question the propriety of its use. What may be said of its use in general in this disease may be also said in regard to its employment in laryngeal diphtheria. In those cases where the membrane extends from the pharynx to the nares and larynx, its value is unquestioned. This class of cases, a large majority of which under the use of the old remedies we expected to see die, we now treat with a reasonable expectation of success. All now regard antitoxin as the remedy *par excellence*.

So much as a prelude to the value of the use of antitoxin in a class of cases generally designated as membranous croup.

I do not care to provoke a discussion upon the identity or duality of membranous croup and diphtheria. I believe that so far as the histological characteristic of the exudate is concerned, no difference is found. I also am willing to concede that in about eighty-five per cent. of cases of membranous croup examined, the Klebs-Loeffler bacillus is present. Pathologically it would seem that membranous croup is simply diphtheria locally manifested in the larynx. When we come to the clinical side of the subject, how is it? I know that in practise in a large city, where one very seldom sees a case of croup without an exudate in the pharynx and all the depressing symptoms found in diphtheria, one will be persuaded that there is only this clinical difference, namely, there is added to the signs of an exudate in the pharynx the other distressing symptoms due to stenosis of the larynx because of pseudo-membrane deposited on its mucous surface. Unfortunately for the children, membranous croup is found in localities other than those densely populated and where diphtheria is endemic. In the country, in smaller cities, towns and villages pseudo-membranous croup prevails, and its clinical characteristics are wholly unlike diphtheria, except only the symptoms which one would naturally expect—laryngeal obstruction. All these cases are attended with a frightful mortality.

The fact is that prior to the introduction of antitoxin in the treatment of this disease, the physician who was called to one of these cases, fully developed, expected it to die. I saw my first case in 1878. Since then I do not think a year has passed without either my seeing one or more cases of my own or seeing one in consultation. Prior to this last year I never saw but one well developed case get well, and that was in a boy thirteen years of age. Perhaps others situated as I have been may have been more fortunate, but this has been my experience.

Now what is the clinical picture of the cases I have treated? and I believe they are the same as those of other physicians who have been situated as I have been. First, as a rule, the children attacked are strong and healthy, excluding those cases which occur following measles and scarlet fever. The first thing noticed is slight hoarseness, which gradually increases. There is some elevation of temperature, with increased heart's action. The child, however, feels reasonably well, and in the very large majority of cases is allowed to be up and around or even play

out-of-doors. In nearly all of these cases an examination of the throat will reveal no exudate. The hoarseness and fever gradually increase, and before very long slight laryngeal obstruction is observed, followed by complete suppression of the voice. After a greater or less length of time this obstruction becomes marked. The inspiration is prolonged and becomes labored; the muscles of thorax and abdomen are called into increased action; there is precordial and intercostal depression on inspiration. Cyanosis supervenes, and unless relief is had the child dies from exhaustion, the result of its labored effort to get air and from carbonic acid poisoning. There are no symptoms of depression or septic infection so characteristic of diphtheria. The child dies from strangulation and not from systemic infection.

These cases are, almost without an exception, sporadic; they are not infectious. I have never known of two cases occurring in the same family, nor have I ever witnessed anything in this connection which would indicate a possibility of the disease spreading from one family to another. If the disease is diphtheria, it is so mild, so far as its specific character is concerned, as to be unable to propagate itself, or to produce those constitutional symptoms which are so marked in genuine diphtheria.

I have never witnessed a case where there was glandular involvement, nor have I ever heard of a case which after recovering was followed by paralysis or any other nervous sequelæ. The exciting cause of an attack I believe is due to an exposure to sudden changes of the weather, and especially when the prevailing wind is cold and from the northeast and east. These cases are not observed during an epidemic of diphtheria. My observation is that as a rule the croup was manifest at periods of time when there was nothing to indicate that this disease was in any way connected with other cases of diphtheritic disease in the near or remote surroundings; and while I try to quarantine my patient, it is only for the reason that authorities whom I do not care to disregard advise this, and not because I believe the disease is infectious or contagious.

From what I have written it will doubtless be seen that while I do not deny that, from an etiological and pathological standpoint, membranous croup and diphtheria may be one and the same disease, yet clinically they are as different as two diseases can be—that is, different so far as the important symptoms are concerned. Of course, the symptoms of laryngeal stenosis in membranous croup and laryngeal diphtheria are common to both.

Taking into consideration, then, this clinical difference in croup and diphtheria, and not being fully convinced of the identity of the two diseases, is it to be thought strange that one would commence the use of antitoxin for the relief of membranous croup with but very little confidence in the virtue of the remedy? I think not. Without having full confidence in the propriety of using antitoxin in laryngeal diphtheria, it required a measure of actual trial and experience with this remedy to give me any faith in its use in membranous croup. I have used it, and although a skeptic at the commencement, still I administered it with the determination to give it as fair a test as though I had unbounded confidence in its remedial virtues. I gave it in fairly large doses; I relied upon it to the exclusion of all other remedies, with the exception of stimulants, and in eleven cases had only two deaths. The following is a list of cases and results:

CASE I.—Boy, aged seven years. Two doses antitoxin; recovery.

CASE II.—Boy, aged three years. One dose antitoxin; recovery.

CASE III.—Girl, aged five years. Three doses antitoxin; recovery.

CASE IV.—Boy, aged two years. Three doses antitoxin; recovery.

CASE V.—Boy, aged four years. Two doses antitoxin; died.

CASE VI.—Girl, aged two years. One dose antitoxin; died.

CASE VII.—Girl, aged two years. Two doses antitoxin; recovery.

CASE VIII.—Boy, aged four years. Two doses antitoxin; recovery.

CASE IX.—Girl, aged two years. Two doses antitoxin; recovery.

CASE X.—Girl, aged three years. Two doses antitoxin; recovery.

CASE XI.—Girl, aged two years. Two doses antitoxin; recovery.

The first case was seen October 31, 1897; the last case April 15, 1898. These eleven cases occurred in the practise of my partner, Dr. Yates, and myself (except two, which I saw in consultation). These two had been given the usual remedies without benefit, and only commenced to improve after the administration of the antitoxin. My experience in these cases is somewhat different from what I had been led to expect from those who advocate the use of antitoxin in this class of

cases, viz., that relief did not come speedily. In the first case improvement was seen in twelve hours; in none of the others under twenty-four hours; in some, not until forty-eight hours had elapsed. When improvement came it was marked, the respiration becoming easy in a very few hours. The remedy in connection with the stimulants seemed in a remarkable degree to sustain the little sufferers in their labored efforts to breathe. In the eleven cases the antitoxin was administered twenty-three times; not a single unfavorable symptom was observed, except in one case, in which an eruption appeared after the second dose. In all the others no reaction, no rash, no depressing symptoms of any kind, and no local inflammation or abscess at point of injection. In none were the kidneys affected.

It will be logically argued that this report, if it means anything, is a strong argument in the support of the doctrine of the identity of croup and diphtheria; perhaps—but I do not believe any one will advocate the doctrine—that puerperal fever and erysipelas are one and the same disease, notwithstanding the fact that the antistreptococcic serum is of great value in both diseases and is held to be curative in these cases. One cannot be too emphatic in advising the early use of the remedy, antitoxin, in membranous croup. The sooner it is administered, without doubt the greater prospect of success. Another point, which I think should not be lost sight of: give large doses to begin with, and an increase if favorable symptoms are not observed. Use from 1000 to 1500 units, and repeat in the same or larger-sized doses every twelve hours if necessary. As soon as obstruction is marked and breathing labored, give stimulants in full doses in connection with the antitoxin.

In eight of the eleven cases Parke, Davis & Co.'s antitoxin was used. Its purity and uniform strength cannot be questioned, and the neat and thoroughly aseptic method of placing it in the containers, ready for the physician's use, makes it, I think, above all others the most desirable preparation.

THE CONSERVATIVE TREATMENT OF FIBROID TUMORS OF THE UTERUS.

By E. E. Montgomery, M.D.,
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The influence of fibroid growths of the uterus upon the general health of the patient is dependent to a large degree upon the situation of the tumor. Thus an intramural, or mural, tumor of small size which encroaches upon the mucous membrane will early give rise to profound disturbance of the menstrual function and consequently upon the nutrition, while an extramural growth will remain without symptoms and only be discovered by accident. As the first class produces symptoms, it will necessarily compel consideration of the best method for combating its baneful effects, but those growths which develop beneath the peritoneum and are only recognized by accident may seriously lead to question as to the wisdom of their being subjected to any interference.

Considering all uterine fibroids, it becomes then a question, first, as to what may be considered proper reasons for subjecting them to treatment, and second, what shall be the course of interference. Among the indications which will be so apparent as to require no discussion is the occurrence of hemorrhage at the regular period, but excessive in quantity, causing the length of the period to be greatly prolonged; or intermenstrual irregular bleeding, induced by exposure, fatigue, excitement, or the sexual relation. In either class of cases the patient may become profoundly anemic and a lowered state of vitality result, which will be favorable to the development of intercurrent diseases.

Instead of hemorrhage the patient may suffer from a profuse, enervating mucus, or muco-purulent discharge. Small growths may cause agonizing pain, uterine contractions similar to those of parturition. This symptom characterizes the intra-uterine fibroid, which the organ regards as a foreign body, and upon the expulsion of which all the energy of the uterus becomes concentrated. The pain may be so great as to demand the use of morphine for its relief, thus endangering the formation of a pernicious habit. Pressure upon the pelvic veins may produce edema of the lower extremities, of the vulva, and even of the tumor itself. Symptoms of peritonitis may develop trouble with the bladder, the rectum, or one or both ureters. Such diseased conditions are most frequently produced by pressure. I have repeatedly seen pressure upon the ureters result in their dilatation and that of the pelvis of the kidney until the latter organ was sacculated, with the greater portion of its structure destroyed. Large growths will disturb the respiration. Fatty changes are likely to occur in the heart. Necrosis may occur in the

structure of the tumor, with the formation of pus, thus greatly increasing the danger either with or without operation. Degenerative processes of a malignant character are possible. Sarcomatous infiltration of the tumor is the most frequent form. With mural fibroids I have twice seen the mucous membrane of the entire uterine cavity undergoing epitheliomatous change. The influence upon pregnancy is not without interest. Occasionally a fibroid will disappear under the changes of pregnancy and the subsequent puerperium. Not infrequently the patient will abort; sometimes the tumor, as the result of the increased tissue change in the uterus, will so rapidly enlarge that interference becomes necessary to relieve the oppression. Where the patient reaches the full term of pregnancy her danger is by no means past. The tumor may be so situated as to prove an obstacle to the progress of labor, or the involvement of the uterine wall cause irregular and ineffectual contractions, thus greatly delaying delivery.

The bruising of the tumor capsule during labor sets up inflammation, favors infection and subsequent suppuration. The processes of involution may arrest the nutrition in the growth and lead to loss of vitality and necrosis. Patients advanced in years are often advised that the menopause will arrest the growth and even lead to a decrease in its size, with relief from all of its annoying symptoms, but experience demonstrates that this cannot always be assured. In the mural and intramural varieties, the climacteric is generally delayed, pain and hemorrhage are increased. Even subsequent to the menopause abnormal changes are not precluded.

A deposit of calcareous material can take place in the tumor wall, and the circulation be so involved that necrosis results. The advent of the menopause does not always mean arrest of growth, for these tumors frequently increase in size. This enlargement is, however, more frequently produced by edema than from actual tissue growth.

Medical treatment affords but little encouragement. It is ineffective to control hemorrhage, and while it aids in securing the extrusion of the growth and thus renders it more accessible to surgical procedure, it is exceedingly tedious and not without danger from necrosis through the too marked interference with nutrition.

The various alterative and absorbent remedies have not produced results worthy of consideration.

The disappearance of such tumors under the employment of electricity has been so rare as to justify doubt in the correctness of the diagnosis and observation. Generally, electricity does afford relief by diminution of the blood-pressure in the uterine wall, reduction of the inflammation in the connective tissue enveloping the growth, diminution or cessation of the pain, and the disappearance of the hemorrhage; but these beneficent results are not always secured.

Various other methods of local treatment, such as dilatation of the neck, section of the enveloping mucous membrane, massage of the uterus and tumor mass, hot douches, intra-uterine injections of solutions of iron or iodine, curettement, castration and ligation of uterine arteries, are neither always effectual nor free from danger. I saw one patient have a severe pulmonary congestion and edema following an intra-uterine injection for the control of hemorrhage induced by a submucous fibroid. The same patient later became insane. Curettement may be followed by suppuration in the tumor or its capsule, and cause death from sepsis. Ligation of the uterine arteries, while attended with some danger of sepsis, still leaves the growths, which must undergo a process of retrogression not unattended by possible peril. Aside from the limited number of cases in which a pedunculated fibroid could be removed through the vagina, until within a few years no other opportunity was afforded the patient suffering from growths in other portions of the uterus for their removal than through a sacrificial operation involving the uterus, tubes, and ovaries.

While not claiming to present an original device or method of procedure, it is my purpose to maintain that there are many uteri from which a sessile, submucous, an interstitial fibroid or multiple growths can be removed by enucleation, leaving a healthy functionating organ. This practise under proper aseptic precautions is attended with less shock and discomfort to the patient than the apparently more simple operation of extirpation of the organ. Whether the growth shall be attacked through the vagina or by way of abdominal incision will depend upon its situation, size, and the previous condition of the patient. Pedunculated or sessile, submucous and interstitial growths which have not attained too large a size to pass through the pelvis should be attacked through the vagina, unless the patient is unmarried and the vaginal orifice undilated.

When the growth is so large as to rest

above the brim of the pelvis, the uterus occupied by multiple growths, possibly comprising every variety, or the vagina small, the abdominal route is preferable.

Necessarily, not every patient will present conditions favorable for such an operation. The uterine structure may be so extensively involved as to preclude its successful retention, or be complicated by disease of the appendages so severe as to render restoration of function impossible. In such cases a sacrificial operation must be done. The ideal operation is one which removes the disease and leaves an organ capable of performing its normal functions. This operation may be done more frequently than it has been practised in the past. It consists in an enucleation through a minimum incision, using for this purpose a blunt dissector as occupying less space and affording less danger of carrying infection to the injured tissues.

The operation is done either by the vagina or through an abdominal incision. In the majority of cases the abdominal incision would be required. Small growths more or less pedunculated, which have partially or completely dilated the cervix, produce but little difficulty in either diagnosis or treatment. Where the cervix is not sufficiently dilated to afford investigation and exit for the growth, a bilateral incision can be made and the tumor rendered more accessible. Where the tumor is situated within the cavity of the uterus, with a cervix which is more or less long and undilated, the difficulty is more marked. An investigation of the situation and the size of the growth with its relation to the uterine wall is an important prerequisite to an operative procedure. To secure such an investigation it is necessary that the canal should be dilated in order to permit the introduction of the finger. This dilatation may be accomplished by repeated gauze packing (Vulliet), dilatation with bougies (Hegar), the use of tents, or bilateral incision of the cervix to or beyond the internal os (Péan). Bilateral incision would seem too radical a measure for a mere diagnostic purpose, and with proper dilatation will be unnecessary for the removal of some growths. The situation of the incision would be impracticable, or embarrassing, in the treatment of others. Vulliet's method is slow and not always effective. The use of bougies will cause the cervix to be badly torn before the canal is sufficiently opened to admit the finger. Dilatation by tents is the most satisfactory. Sponge tents are the most effective, but are so difficult to render aseptic and so easily infected that their employment is not advisable. The hollow laminaria tent of good size will in the great majority of cases render digital exploration possible within twelve hours. Where the canal is insufficiently dilated with the first tent, it may be carefully cleansed and the dilatation accomplished by a second relay of tents. If the surgeon is unprepared for operation at the time of the digital exploration, this dilatation may be maintained twenty-four hours longer by gauze packing. Rigid asepsis must be the rule in all these procedures. After the tumor has become accessible to the touch, further procedure must depend upon its situation, size, and relation. A small pedunculated tumor will in this manner be almost as accessible to manipulation as if it were situated in the cervix.

Recently I treated an unmarried woman, thirty-five years of age, who had suffered for over a year with irregular menstruation. The periods, which had formerly lasted from one to three days, now continued from ten days to two weeks. She had frequent severe cramp-like pains during the period. The uterus was but slightly enlarged. Near its fundus could be recognized a hard mass which was slightly movable. Two laminaria tents were introduced on the 14th of January, 1898. Upon their removal the following morning the finger could be introduced to the fundus and a fibroid polypus was discovered. A tenaculum was passed on the finger and caught in the pedicle. The tumor, steadied by this, was hooked by a second, with which it was delivered, the small pedicle breaking. Subsequent careful exploration disclosed this to have been the only growth. The fibroid was the size of a small hickory-nut. Convalescence was undisturbed.

In 1885 I saw an unmarried woman, forty-five years of age, who was so exsanguinated by repeated hemorrhage that the condition had been pronounced malignant disease. Dilatation with laminaria tents revealed a sessile fibroid the size of an egg situated in the posterior wall, which was delivered by enucleation after bilateral incision of the cervix. The cervical wound was sutured. The patient recovered after a prolonged convalescence due to faulty technique.

In September, 1896, a young married woman came under my observation, who had begun to suffer from dysmenorrhea and menorrhagia after a fall from a hammock.

Her health was broken and the condition aggravated by a valve lesion, causing mitral regurgitation. Owing to her constitutional condition, efforts were made by the use of ergot, and subsequently thyroid extract, to relieve the condition without operation, but the treatment was attended with such unpleasant results that it was discontinued. The fundus of the uterus was considerably enlarged. Dilatation revealed an interstitial fibroid the size of an egg in the posterior uterine wall. An incision was made from the uterine cavity through the intervening wall with the hope that the administration of ergot would facilitate its extrusion, but the drug was so injurious and she became so much depressed that I decided, regardless of her constitutional condition, to resort to radical operation. Under chloroform the uterus was dilated with bougies. A bilateral incision was made through the cervix, the tumor exposed, seized with a double tenaculum, and enucleated. The cavity was thoroughly irrigated and packed with gauze, the end of which was brought out at the os. The canal was restored by lateral sutures. Convalescence was uninterrupted.

In larger growths occupying the anterior wall a bilateral incision is unsatisfactory. The growth may be rendered more accessible by a circular incision through the vagina in front of the cervix, and splitting the utero-vesical septum. Then a vertical incision through the anterior lip and wall of the uterus will expose the growth, which can be enucleated. If it is large, its delivery can be expedited by morcellation. Where necessary, one need not hesitate to incise the peritoneal cavity, but where the growth is situated well above the cervix the incision need not extend through the latter, but be made transverse and vertical; in other words, a T incision with the stem upwards, in this way exposing the growth and enucleating it. After the growth has been removed, the uterine incision should be closed with continuous catgut suture, and the peritoneum and vagina reattached to the uterus. Occasionally an incision through the posterior lip will render the growth more accessible, and if necessary Douglas' pouch may be cut into, the tumor or fundus of the uterus turned down, the growth enucleated, the wall sutured, the uterus replaced, and the wound closed.

The abdominal route affords easy access to large and multiple fibroid growths. After opening the abdomen the uterus is raised up, walled off from the abdomen by gauze pads, and the incision made over the growth where it is most accessible, the mass seized with a double tenaculum, and the enucleation completed with a blunt dissector. Bleeding vessels may be secured by hemostasis. All growths, however small, should be removed. That the growth is submucous or intra-uterine need be no bar to its removal through the abdominal incision. Where possible the growths should be removed through one incision.

Alexander reports twenty-six tumors thus removed; but the uterine structure should not be torn up unnecessarily in order to bring all the growths through a single incision, as frequently less mutilation will occur by making two or three incisions. Previous curettement and insertion of gauze drain where it is probable the uterine cavity will be opened has been advised, but such advice is unwise, because the gauze packing may result in embarrassment in determining it from a growth, and still more if it is necessary to invade the uterine cavity. All incisions should be closed with continuous catgut suture in double rows. Where the incision is deep, the last includes a good portion of the peritoneum. In one patient I removed thirteen fibroids, five of which were intra-uterine; in another nine, the largest of which was the size of a child's head. In one operation I split through the fundus of the uterus into its cavity, extending the incision some distance upon the anterior wall. The surface was resutured and the patient recovered without abnormal symptoms. The largest tumor (weighing two and one-half pounds) thus removed was in a woman thirty years of age, unmarried, in whom the growth had completely taken up the cervix and had dilated the os so that the finger could reach the tumor. As the vagina was undilated its removal through that canal was not feasible. An abdominal incision was made, the uterus raised, and an incision made through its posterior wall. Then with blunt dissector the small uterus was peeled off the very large tumor, leaving quite a large cavity, which was closed by buried and superficial catgut sutures, a gauze drain having been passed into the vagina through the cervix. The woman, with the exception of an elevation of temperature to 103° on the third day, did well. This temperature soon subsided, and her convalescence was subsequently uninterrupted. She had been completely exsanguinated, prior to the operation, by the repeated hemorrhages. The great advantage

of this plan of treatment is that it leaves the patient free from mutilation, and even though she should not subsequently become pregnant the hope has not been removed, and the patient is spared the unpleasant phenomena incident to a premature change of life.

Of course it is important in the consideration of any plan of treatment to consider its mortality and subsequent effect on the health of the individual. Engstrom recently reported one hundred enucleation operations with four deaths. In my own experience the shock and constitutional symptoms have been much less marked in these operations than in those of hysterectomy. Another important consideration is the subsequent effect upon the uterus; thus it has been objected to this operation that there may be small growths in the wall of the uterus which are unobserved and may subsequently develop. This has not been the experience, however, in the hands of Martin and others, who have practised this method extensively. Another consideration is the influence upon subsequent pregnancy. In Engstrom's one hundred cases four became pregnant. The difficulty in basing any statistics upon this, of course, can be readily understood, when we take into consideration that of the one hundred and thirteen cases reported by Martin, forty-six per cent. were unmarried, and twenty-seven per cent. were over forty years of age.

Of the four cases reported by Engstrom which became pregnant, one aborted during an attack of typhus at the fifth month, again became pregnant, and aborted at the third month. She had been married seven years previous to the removal of the growth, and was never pregnant. The second had been married and yet without pregnancy. Ten intramural myomas were enucleated, from the size of a hazelnut to that of a hen's egg, besides a pedunculated fibroid the size of a duck's egg. This patient aborted at the fourth month. The third had a tumor the size of a hen's egg enucleated from the anterior wall. Pregnancy followed and reached full term, and she was delivered without difficulty. The fourth case had had three abortions prior to the operation. Intestinal adhesions to the left ovary and fundus uteri were separated in the operation, the left ovary extirpated, and a myoma the size of a walnut enucleated from the depth of the anterior body wall. Eight months subsequently the patient conceived, and at the time of the report was three months pregnant.

Olhausen cites three cases of pregnancy following enucleation.

This operation, then, has the advantage, as we have already noted, that it does not preclude the possibility of pregnancy; that it saves the woman from the psychic symptoms resulting from the sacrifice of important organs; that it is not attended with any more danger than, if as much as, would result from the extirpation of the uterus with the growths.

POISONOUS HONEY.

By Ralph Stockman, M.D.,
Professor of Therapeutics in Glasgow University, Glasgow.

In the Therapeutic Gazette of February Dr. Voorhees describes a case of poisoning by honey; and again in the issue of May Mr. Edmund Jenner refers to the same subject and instances the well known case of the Greek troops as described by Xenophon in the Anabasis. Mr. Jenner states that the poison is derived from either the *Nerium Oleander* or the *Datura Stramonium*. The origin of the poison is, however, now well known, as exact researches have been made on this curious subject. It is probable that bees may obtain poison from various plants, but there is now no question as to the special plant which furnished the honey, the effects of which have been so graphically described by Xenophon.

Poisonous honey is still well known in the neighborhood of Trebizond, on the shores of the Black Sea, and in 1887 Mr. E. M. Holmes, of London, obtained a quantity from the British Consul. It was handed over to Dr. J. C. Thresh and myself for investigation, and Dr. Thresh has published a very interesting account of poisonous honeys (*Pharmaceutical Journal and Transactions*, 1887–88, vol. xviii, p. 397), including specially the Trebizond variety. We obtained the active principle of the honey nearly pure, and it gave characteristic chemical reactions, showing that it is identical with andromedatoxin, the poisonous constituent of *Rhododendron ponticum* (*Azalea pontica*), and numerous other plants of the order Ericaceæ (Plugge, *Archiv der Pharmacie*, 1889). Experiments which I made on animals with the substance extracted from Trebizond honey showed that it had a stupefying effect from paralysis of the brain and spinal cord, the respiration being especially affected, while the heart remained comparatively untouched. Death occurs from paralysis of the respiratory center.

Later Plugge (*Archiv der Pharmacie*, vol. xxix, 1891) made an interesting contribution to the subject, in the course of which he states that it is a matter of popular knowledge in the neighborhood of Trebizond that the poisonous honey is derived by the bees from the flowers of *Rhododendron ponticum*. Plugge, however, settled the matter in another fashion. By means of fine capillary tubes he sucked up the saccharine matter from the flowers of *R. ponticum*, and experimented with it on animals. These experiments gave the characteristic effects of Trebizond honey and of andromedatoxin.

Any one who is interested in the question will find much relevant information regarding poisonous honey in the paper by Dr. Thresh, cited above.

EUCAINE HYDROCHLORATE "B" AS A LOCAL ANESTHETIC IN THE NOSE.

By Lewis S. Somers, M.D.,
Philadelphia, Pa.

In the Therapeutic Gazette for January, 1897, I reported a series of cases of hypertrophic rhinitis in which eucaine was used as a local anesthetic, to obviate the pain consequent upon cauterization of the turbinal tissue. In many ways this drug was found to be unsatisfactory as compared with cocaine, especially as to its lack of ability to shrink the engorged cavernous tissue. Since that time eucaine "B" has appeared, and its use in a series of cases, as a local anesthetic in the nasal cavity, forms the basis of this communication.

The drug is a white, crystalline powder, of neutral reaction, and sparingly soluble in water at ordinary temperature, but the solubility is increased by the addition of heat, and in the latter instance precipitation occurs in a short time as the temperature of the solution falls to that of the surrounding atmosphere; this may be overcome, however, by repeatedly warming the solution as desired, the addition of the small amount of heat necessary to raise the temperature being sufficient to clear the solution, not interfering in any way with its anesthetic powers. It is non-irritating and possesses but a small degree of toxic property as compared with cocaine or the previously mentioned form of eucaine, and being closely allied to both these drugs and also to tropacocaine, it partakes in a degree of their general properties. It differs from the other local anesthetics mentioned, inasmuch as its ability to produce anesthesia is not impaired by boiling, thus allowing of perfect sterilization. It is also supposed to possess a "slight antibacterial action," but this has not been proven and is of little or no value. To properly prepare the solution it is advisable to use sterile water without the addition of an antiseptic, and heat the mixture until solution is effected, when it is ready for use. Wishing to compare this form of eucaine with cocaine as generally used for intranasal anesthesia, it was desired to make a four per-cent. solution, this being the same strength of the latter drug; but preparing it in the same way with water at 75° F., it was found that all the drug would not dissolve and it became necessary to make a three-per-cent. solution, the water taking up a sufficient amount to make a clear solution of this strength.

The cases studied were in both sexes and the ages varied, the youngest being nine while the eldest was thirty-two years. In all cases there was hypertrophy of the turbinal tissues, the inferior generally being selected for cauterization, and chromic acid fused on a probe was used as the cauterant. A three-per-cent. eucaine solution was applied to the parts desired by means of a cotton plug saturated with the drug, but all excess of fluid was pressed out. The plug was then placed in the nostril over the tissue to be cauterized, and as no data was available to determine the time required to produce complete anesthesia, it was allowed to remain *in situ* for eleven minutes in the first case; then the time was reduced by one minute in each subsequent case, until it was found that complete anesthesia reached its maximum in eight minutes after the application of the solution. In less time than this some pain was usually felt when the cauterant was applied, but if allowed to remain for eight minutes anesthesia was as complete as when a four-per-cent. cocaine solution was used, showing that eucaine is as efficient in this respect as cocaine in stronger solutions. The duration of anesthesia is considerably shorter than when cocaine is used, first reaching a maximum in the time previously mentioned, then rapidly diminishing in intensity, so that within a few minutes after the anesthesia becomes complete its effects are dissipated, the time required for the local action of the drug to disappear being about fifteen minutes. This refers to fresh solutions, but after the drug commences to precipitate, which is about the third day after

being freshly prepared, the precipitate increasing in quantity every day after this, the anesthetic properties progressively diminish, but the solution is still useful, its value remaining unimpaired for three weeks; and after this time it is of little value until the end of the fourth week, when it no longer acts as an anesthetic.

In all cases except three no effect was produced on the mucous membrane, it remaining unchanged under the influence of the drug, while in the three cases one gave evidence of a slight degree of congestion very probably due to traumatism from too much pressure in inserting the cotton plug; and in the other two cases shrinking of the membrane was observed in but very moderate amount. No untoward local effects, such as an excessive amount of irritation, were noticed, and what is still more important, there were no constitutional evidences of the action of the drug. Used in the amount necessary to anesthetize the nasal mucous membrane for minor operative procedures, it was found to exert only its local action, and possessed no untoward action at all on the other tissues of the body. It was observed that the unpleasant taste and partial loss of sensation in the pharynx when cocaine is used in the nasal chambers were entirely absent except in one case; this was but trifling, however, and was the consequence of using an excess of the solution to see if this more or less unpleasant action would take place. That it did not occur in all the other cases is probably due to the slow action of eucaine as compared with cocaine, and not to a smaller amount of solution, for the same quantity was used, it being desirable to have all the conditions similar, so that the comparison could be as accurate as possible.

From a study of the results obtained by the use of eucaine "B," the following conclusions as to its value compared with cocaine and the former eucaine may be deduced:

1. Eucaine hydrochlorate "B" in three-per-cent. solution produces as complete anesthesia of the nasal mucous membrane as does a four-per-cent. solution of cocaine.

2. Its action is slower than the latter drug.

3. The anesthesia is dissipated more rapidly than that produced by cocaine.

4. It is non-toxic in the strength and manner here used.

5. As it has no apparent shrinking action on the turbinal investiture as has cocaine, it is therefore less valuable for nasal surgery than the last mentioned drug.

6. It is superior to the former variety of eucaine because its toxic properties are less, it is more rapid in action, is non-irritating, and the same degree of anesthesia may be produced by smaller amounts of the drug.

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GLANDULAR THERAPY.

Vogt in the *Revue de Thérapeutique* of May 15, 1898, is reported as having given a summary of the actual state of glandular therapy before the French Congress of Internal Medicine in April of this year. He states that medication by means of testicular juice is generally abandoned, but medication by means of ovarian juice is gaining in favor. The ovary is employed in dry powder or in tablets, or in a glycerin extract. Sometimes patients are intolerant to it, but usually two to four grains a day are given. It is employed in the following diverse conditions: To overcome the results of double ovariotomy, to combat the troubles of the menopause, to overcome sexual atony, to combat chlorosis. It is useful, too, in osteomalacia and for nervous maladies, such as hysteria, neurasthenia, and exophthalmic goitre. Extracts of the cerebral and medullary substances are practically abandoned, save the use of the pituitary body in the treatment of acromegaly. It is stated that practically no good results have followed the use of bone-marrow in pernicious anemia or chlorosis, nor has extract of spleen done good in malarial poisoning.

Brunet has reported a case of chronic bronchitis treated with pulmonary juice, with diminution in the expectoration. Extract of kidney has been used to treat anuria and to overcome uremic poisoning and dyspnea. It is claimed by Gilbert that it decreases albuminuria and modifies the severity of the disease. The suprarenal glands have been used with asserted advantage in asthenia as well as in Addison's disease, but the use of the pancreas for diabetes is still in the experimental stage.

In regard to the value of the liver, it is stated that in a case of cirrhosis with delirium the daily ingestion of three ounces of fresh liver causes the rapid disappearance of cerebral trouble, and that it has been used in the case of severe alcoholic cirrhosis with advantage, the hemorrhage being stopped, the delirium ceasing, and the color returning. In diabetes the results from its use are variable.

The Therapeutic Gazette

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Leading Articles.

THE PHYSIOLOGICAL ACTION OF HIGH ALTITUDES.

The time has passed when pure empiricism dominated therapeutic procedures. At first we began by learning more and more of the physiological action of drugs and so became more successful in their application to pathological processes, and side by side with these advances others have been made in studying the physiological effects of remedial measures other than drugs.

Our attention has been forcibly called to this matter by a paper which has recently been published by Dr. Solly, of Colorado Springs, embodying his remarks made before the Philadelphia County Medical Society upon the "Blood Changes Induced by Altitude." It has been known for many years to medical men that the most powerful means of cure at our disposal in many diseases consisted in sending the patient to a climate which would exercise a favorable influence over his malady. At one time sea voyages of a prolonged character, or residence for many months upon islands situated far off from the mainland, which provided patients with a pure ocean climate, were the favorite resorts of consumptives, but increasing knowledge has shown us that while the fresh air and sunshine of these regions is distinctly advantageous in the majority of cases of pulmonary tuberculosis, high altitudes give better results. It was thought at one time that the physiological effects of high altitude, both upon the well and diseased, depended upon the diminished amount of oxygen present in the air, but more recently it has been discovered beyond all doubt that these symptoms arise because of diminished oxygen tension, there being at high altitudes a condition in which the molecules of air are more widely separated than at the sea level. It is also a well known fact that after a person has been at an altitude for a considerable period of time he can take more and more exercise with less and less discomfort, and that instead of the altitude making him ill he is very apt to develop a degree of healthfulness in excess of that which he possessed when at a sea level. This is due to the fact that the system produces blood changes as a result of which a greater quantity of oxygen can be absorbed, this change consisting in an increase in the number and size of the red cells and in the proportion of hemoglobin which they contain. Thus, as pointed out by Solly, the ordinary number of red cells, varying from 4,000,000 to 5,000,000 in a healthy adult, may be raised to 8,000,000 by residence at a high altitude of say 15,000 feet; that at Colorado Springs, which has an altitude of 6,000 feet, it may be raised to 6,000,000. In other words, the increase in the blood of a healthy resident of the Atlantic coast after a few weeks' stay at Colorado Springs would be about sixteen per cent.

It is evident, therefore, that in addition to the beneficial influences of pure air, intense sunlight, increased respiratory activity and exercise there are definite hematic changes which are even more beneficial to the invalid. It has been claimed by some that the greater blood count of persons living in a high altitude is merely a relative increase due to dryness of the air, which causes less liquid in the blood; but on the face of it this claim is absurd. The specific gravity of the blood is unchanged by altitude, and the increase which we have spoken of is not simply relative, but actual. Solly also points out that residence at a high altitude produces a normal hypertrophy of the cardiac muscle, and what is still more curious,

that both animals and man after they are acclimated can endure longer and run faster than they could when living at a lower level. Thus he cites the fact that bicycle racing at Denver has shown records which support this statement, and that race horses also make good time. The fact is also pointed out that the altitude produces a reduction of blood-pressure with a relaxation of the vessels, and that as a result the peripheral capillaries are constantly filled with blood, which accounts for the ruddy hue of those persons who live for any length of time at such an altitude as we have named, while the cool air and hot sun act as antagonistic stimulants upon the surface of the body and indirectly upon the nervous system.

One of the most important portions of Dr. Solly's paper is the emphasis which he lays upon the necessity of prescribing a definite climate for a definite case. As he expresses it, "an altitude is a bad climate for an invalid fool," and we might add altitude is a bad prescription for the physician to give his patient without due consideration of the physiological effects of the region and of the individual characteristics of his patient. Briefly expressed, it may be stated that exceedingly nervous patients as a rule do not do well at a high altitude, as it is apt to increase their insomnia and nervous irritation. In addition to this, it is a fact that in most high altitudes the conditions are unfavorable to persons suffering from genito-urinary diseases, and that persons suffering from fatty degenerations of the various organs, and particularly of the heart, do not receive benefit in these regions, but on the contrary may be injured. Finally, it should be remembered that a climate cannot regenerate organs which have been destroyed by disease any more than can drugs, and patients so far advanced in pulmonary tuberculosis as to be necessarily hopeless cases should not be made to spend their energies, their funds and their store of hopefulness in a vain search for the El Dorado of Youth which is as far beyond their reach as was that of the early Spanish seekers after it in pre-colonial days.

THE THERAPEUTIC VALUE OF METHYLENE BLUE.

A valuable summary of the physiological and therapeutic activities of methylene blue has recently been contributed to the *Revue de Thérapeutique Médico-Chirurgical* of April 1, 1898, by d'Aulnay. In his concluding contribution upon this subject he gives an interesting and exhaustive list of the diseases in which this remedy has been employed internally, with mention of the names of the clinicians who have employed it, and follows this by another list in which he details in a similar manner its external applications. As he well points out, methylene blue possesses three properties: First, it is a coloring agent; second, it acts as a microbicide or disinfectant; third, it possesses distinct analgesic properties. It is with its microbicide influence that we first became familiar with the drug, and most physicians are familiar with the papers of Stilling in which he described its powers in destroying micro-organisms and urged its use as a local antiseptic. But its value as a pain reliever is even more noteworthy. Combemale believes that its analgesic properties are in part due to the transformation of oxyhemoglobin into methemoglobin, but we cannot understand how this is possible. Amongst the diseases in which it may be employed with a certain advantage internally we find cancer of the stomach, malaria, nephritis, hypergastric acidity, and as an antineuralgic for facial or sciatic pain. It is also said to be useful in rheumatic pains, and has even been given in ataxia and angina pectoris and migraine, with asserted success. A considerable disadvantage in its use is, of course, the manner in which it stains everything with which it comes in contact, and when taken by the mouth it stains the mucous membrane and gives a disagreeable styptic taste. For this reason it is better to give it in pill or in cachet. Absorbed by the stomach and intestine, it colors the capillaries through which it passes and stains the lymphatics—indeed, all the tissues with which it comes in contact are stained by it, except the peripheral nerves.

POISONING WITH BISMUTH.

Many years ago it was the custom of teachers of materia medica to point out that bismuth was capable of producing poisoning with gastro-intestinal inflammation; later it was found that this substance never produced such symptoms unless it was contaminated by arsenic; and finally, it remained for Villemin and others to point out that it was capable of producing chronic poisoning with the formation of black sloughs in the mucous membrane of the mouth and

gastro-intestinal tract, desquamative nephritis and albuminuria. Still more recently in the *Centralblatt für Innere Medicin* for March 5, 1898, there are abstracts of two cases in which poisoning followed its use. In one of these more than an ounce of a ten-per-cent. solution of airol with equal parts of glycerin and olive oil was introduced into a cold abscess after it had been evacuated. Three days later the patient had severe stomatitis and the buccal mucous membrane was black in color. Although the emulsion was withdrawn from the abscess cavity, this blackening of the mucous membrane persisted for two weeks. In the other case, a man took fifteen to thirty grains of bismuth subnitrate, and shortly after an eruption developed, resembling that of scarlet fever. This lasted four or five days, and the skin then came away in shreds resembling desquamation, this being particularly noticeable upon the hands and feet.

The second case does not appear to us to be definitely one of bismuth poisoning. It would seem to us to be rather one of the dermatites, occurring by coincidence, perhaps, as a result of the locking up in the bowel by the action of the bismuth of some toxic material. Perhaps it was a case of dermatitis exfoliativa, which in its mild form is sometimes called erythema scarlatiniform.

FOREIGN BODIES IN THE BRONCHI.

This important subject has recently been dealt with in an interesting manner by Dr. Lendon, of Adelaide, South Australia, in the *Intercolonial Medical Journal*. He was led to study the literature of the subject by the occurrence of a case in his own practise, the case itself being of very considerable interest.

A boy of seven years drew into his bronchus an ebonite shirt stud, was immediately seized with asphyxiation, and was in great distress for a number of hours. For three days subsequently he felt pain in the chest at a spot corresponding to the second right costal articulation. During the succeeding year he suffered from constant cough and an attack of acute pneumonia which commenced with moderate hemoptysis, and finally with a purulent and offensive expectoration. At the end of the year it was also noticed that no air was entering the upper part of the right lung, and fourteen months after the accident he came under Dr. Lendon's care. There was great dyspnea, constant coughing, profuse fetid expectoration, as much as half a pint being brought up in twenty-four hours. There was also marked evidence of hectic fever. Under these circumstances surgical interference was decided upon, and an incision was made into the chest, one inch of the fourth rib being excised. The pleural cavity was emptied, but puncturing the lung did not show any collection of pus. On breaking up some slight adhesions between the middle and right upper lobe a small quantity of pus was liberated, and while manipulating the lung the operator believed that he felt the stud, but immediately afterward lost it.

After the patient recovered from the anesthetic, during a violent fit of coughing the stud was expectorated. This was followed for a few days by great dyspnea and a rapid pulse, but ultimately the boy recovered and has now been in good health for several years.

Lendon goes on to a consideration of the physical signs of a foreign body in a bronchus and finds that they consist in complete obstruction to the entrance of air on the side which is suspected, dulness on percussion, and on auscultation loss of vocal fremitus and resonance, although if the obstruction be partial air may enter the lung, be retained, and produce some resonance. After the acute irritation due to the presence of a foreign body passes by, there is a quiescent stage followed by one of definite inflammation of the bronchus, lung, or pleura, due to the entrance of a foreign body, and under these circumstances septic pneumonia and hematemesis may develop. When an organic substance is swallowed capable of undergoing decomposition and becoming putrid, we not only have these symptoms but those of septic infection, and an abscess of the lung may form. In conclusion Lendon thinks there is rarely any difficulty in deciding which side of the chest is affected.

In regard to the prognosis he points out that a foreign body may remain in the bronchus for sixty years without causing death, as in an instance cited by Gross, but it is more likely to destroy life in from one to five years.

Another instance was reported by Mitchell in the *British Medical Journal* during 1896, in which a half-sovereign is believed to have been in a bronchial tube for twenty-four years without giving rise to any disturbance of the lung, and a piece of bone has been expectorated after being in the lung seven-

teen years. On the other hand, even in those cases where the foreign body is expelled by the efforts of the patient, or removed by a surgical operation, the danger to life is not at an end since an ulcerative or septic process may have been set up, which progresses even after its cause has been removed.

Where the evidences of pulmonary obstruction or septic infection resulting from the presence of a foreign body are positive, the question arises as to whether it is wise to attempt to remove the foreign body from the trachea or through the chest wall. In regard to this point Lendon evidently thinks that we must decide the question in connection with each individual case, although he rather favors exploration through the chest. It is, however, an undeniable fact that the foreign body can often be removed through the trachea by means of a long pair of forceps, but it is interesting to note that Godlee tells us in the *Medico Chirurgical Society Transactions* for 1896 that he performed an operation upon the chest, and opened a cavity in the lung, but failed to find the foreign body. A sinus, however, persisted, and through it the peg of a top dropped out two years later.

Lendon protests against the operation of direct bronchotomy in the earlier stages, as he thinks its difficulties practically prohibit it. He believes that tracheotomy is the only resource and should be done early before obstructive changes occur in the lung, and he insists that inversion should not be practised when a movable body is present, unless the physician is prepared to do tracheotomy at once if urgent necessity arises.

His article concludes with an appendix covering the thirteen cases so far reported in Australia and giving fourteen references to literature bearing upon the subject.

THE OPERATIVE TREATMENT OF JACKSONIAN EPILEPSY.

Braun, of Göttingen, reviews a subject which some years since occupied much time in the proceedings of medical societies, and much space in the periodicals, by the publication of a case of severe Jacksonian epilepsy which was not merely relieved by operation, but which was cured and was still well seven years after the time of the report. As a result of the discussion as to the value of the operative treatment of the affection, the profession at large gathered the impression that the permanent cures were few, if any; that a minor operation, such as trephining, was as likely to be followed by marked betterment as a major one, such as excision of a portion of the cortex; that even when there were distinct lesions, such as cysts or cicatrices or depressed bony fragments, the ultimate prognosis was bad; that even of the ultimate history of the reported cured cases procured few, if any, would be shown to have been permanently relieved of their epileptic attacks.

Braun's case was that of a man twenty-four years old, who suffered from a head injury of the right side in his twelfth year so severe as to produce immediate paresis of the left upper and lower extremity. Four years later epileptic seizures developed, beginning in the left thumb, then involving the arm, later the leg, not accompanied by loss of consciousness. Two years later the convulsions had become more severe, and during them the patient was unconscious. At the first operation, performed in 1889, depressed bone was raised and the contents of a cyst were evacuated. The extreme tenderness on pressure from which the patient had complained was relieved, but his epileptic seizures were not. Three months later a second operation was performed, having for its object the removal of the thickened tissues overlying the motor center for the hand. This also failed of its object. Eight months later the patient was operated on for the third time, the cortical center presiding over the movements of the left hand being extirpated. With the exception of a few light seizures immediately following intervention, the patient after this remained entirely free from epileptic attacks.

Braun has collected fourteen cases in which the motor center found by electrical stimulation was excised. In four of these there was no improvement, five were distinctly bettered, five were reported as cured; but none of these, with the exception of the one reported by Braun, had been under observation for more than fourteen months, hence the cure cannot be justly claimed, since recurrence of convulsions may occur after two or even after three years. Of five cases in which the center was found by its anatomical position and excised, one failed utterly; the other three were not under observation for even six months. A combined statistical study of the cases in which the center as located by electricity was excised, of those in which it was anatomically placed, and of those in which portions of the brain sub-

stance in the region of the Rolandic fissure underlying the seat of an old tumor were removed, shows that of thirty cases nine were improved and thirteen cured, but that only three of these thirteen cases had been under observation for more than three years. This is not a satisfactory showing, but it may be in part due to imperfect technique. Thus, theoretically, cure can only be expected by the accurate and complete removal of a specific center. This can only be found by the electrical current; one too strong will by diffusion confuse, one too weak will not produce peripheral motion. Braun commends a current of such strength that it is perceptible to the moistened finger and is slightly painful to the tongue; it should not produce motion through the dura. Muscular contractures may be absent when the brain at the point of contact is profoundly altered, or when it has been irritated by strong antiseptic fluids, or when it has been chilled by long exposure, or when it is profoundly anemic; possibly also in profound narcosis. The electrode employed is of platinum, two points separated by an interval of about four millimeters. Unless the electrical localization is employed it is quite impossible accurately to place the desired center, and that this has not been done in many operations is shown by the fact that immediate local palsy is not noted in the reports.

A critical review of published cases seems to show that the popular belief as to the ultimate development of an epileptic status which becomes so confirmed that it cannot be cured or even benefited by excision of the original focus of irritation is not well founded, long-standing cases often exhibiting more marked improvement than those of short duration.

In a tabulation of cases of Jacksonian epilepsy treated by partial operation—*i.e.*, those other than excision of a portion of the brain substance—twenty-three cases are noted as cured out of fifty-seven operated on; but of these twenty-three cases it is to be noted that only three had been under observation for more than three years. In so far as the reports of cases are convincing, they show that the results are much better when the trephine is applied over the wound area than they are when the seat of operation is selected because of its marked anatomical relation with the affected brain center. Among the severe cases in which the dura was not opened, one was definitely cured, the patient having remained free of fits for seven years. The best results were obtained when the bone was either so thickened or depressed that it apparently produced local pressure effects. There was marked improvement in every one of these cases.

Among the eighty-seven collected cases, Braun finds that the epileptic seizures began by facial twitching in eighteen, by movements of the upper extremity in forty-seven—in twenty-three of these latter by thumb twitchings.

Although this paper of Braun's cannot lead to any definite conclusion, it at least shows that operative cure of Jacksonian epilepsy, though extremely rare, is possible, and also that in cases characterized by bone depression or thickening marked improvement may confidently be expected.

Braun's advice as to the method of procedure certainly commends itself as conservative and sensible. He suggests that when the focal epilepsy has followed a circumscribed skull wound the first operation should be confined to the bone or the bone and dura. Should this fail the more dangerous and more radical procedure—*i.e.*, the excision of the motor center as indicated by the electrical reaction—may be undertaken, the cutting being carried sufficiently wide and to a depth of five millimeters; or when there is a deep depression or a spot exceedingly tender to pressure not placed near the anatomical position of the affected center, the trephine should first be applied over the seat of lesion without regard to the center. If no improvement follows the center may be sought later. When there has been a very extensive wound the trephine should be applied over the involved center.

Reports on Therapeutic Progress

VELANDER'S NEW METHOD OF ADMINISTERING UNGUENTUM HYDRARGYRI.

HOGNER tells us in the *Boston Medical and Surgical Journal* of March 1, 1898, that he desires to present a very interesting case—a pillow-case—which he thinks will be in the future a valuable instrumental means of administering unguentum hydrargyri.

Dr. Edv. Velander, professor in venereal diseases in Stockholm, Sweden, and head doctor at the great St. Göran's Hospital for venereal diseases in that city, has recently devised this pillow-case for the above named purpose. The writer's own experience in its use is limited to two patients. However, he

has found it so practical, effective, convenient and clean, that he does not hesitate to communicate the facts.

Professor Velander is well known among the profession for the work he has done in this specialty of our art. The Velander method of curing soft chancre by heat is widely spread and adopted with or without modifications. His investigations some years ago on the absorption of mercury in unguentum hydrargyri led him to the conclusion that it is mostly, if not entirely, absorbed by inhalation of the evaporated mercury, and induced him to use in the administration of this drug a combined method of rubbing in the ointment and spreading it out on different parts of the body, and later the simple method of only spreading it over the skin. These facts are now well known. This year he has finally given up spreading the ointment over the skin and relies entirely on the application of the ointment to the inner surface of a pillow-case, which is to be fastened about the patient's body, from the neck downward. This method is now so generally accepted in Sweden that it is there almost the only one at present used in the general administration of mercury externally.

The pillow-case is made of cheap cotton cloth. It measures 38 by 54 centimeters (15 by 21 inches), and has ribbons for its suspension over the chest. The ribbons are placed two laterally at each edge, 12 centimeters (4¾ inches) above the lower corners, and four upward, namely, two opposite each other at the upper edges, 6 centimeters (2½ inches) from the corners. The ribbons are about 64 by 1.5 centimeters (25 by 0.5 inches).

The pillow-case is suspended from the shoulders with the external part of its medicated side toward the body—that is, under the clothing—and is held in position by the ribbons which are tied around the waist and over the shoulders down to the waist ribbons. It is worn consecutively for ten days, alternating every twenty-four hours from the front of the chest to the back, fresh ointment being supplied every night without wiping off the old. After ten days a new pillow-case is applied.

Baths are to be taken once or twice a week, the skin under the pillow-case being washed every night.

Dr. Velander uses, besides this ointment treatment, all necessary local treatment, etc., and with the ordinary attention to the mouth he has not met more stomatitis than usual.

The quantity of ointment used is six grammes (1¾ drachms), of a strength of two hydrargyrum to four constituens; and, as before said, it is spread every night over the same half of one of the insides of the pillow-slip. The best way of doing this is to spread the ointment over the outside and afterward turn the pillow-case outside in.

This simple treatment is very convenient for the patient, as he can go about comfortably as usual, is not bothered with any painstaking rubbing, easily keeps himself clean, and at the same time can easily conceal his treatment.

The pillow case method is also very satisfactory for the doctor, as the mercury seems thus to be absorbed quicker, with less irritation.

THE PRINCIPLES WHICH GOVERN TREATMENT IN DISEASES AND DISORDERS OF THE HEART.

Douglas Powell in the Lumleian lectures, reported in *The Lancet* of April 9, 1898, thinks that the treatment of acute heart failure may perhaps be best referred to in connection with that acute disease in which it is frequently met and of which it too often forms the fatal turning point, viz., pneumonia, in which disease the invalidating conditions affecting the heart are: (1) Stress of labor; (2) blood-supply and nutrition impoverished and vitiated; and (3) innervation, excited and debilitated by the effects of shock and pyrexia. How are we to meet, and it may be to anticipate, heart failure under these circumstances? This is really the kernel of the problem before the physician in every case of severe pneumonia. All rational treatment of the early stages of pneumonia tends to lessen the blood-pressure in the lungs. It is in the latter stages, towards the crisis, when the lungs are most extensively consolidated, when the nervous excitement of early pyrexia is yielding to exhaustion, and when the blood aeration is most defective, that acute heart failure is apt to supervene. A running pulse, irregular from loss of vagus control, is the first symptom, soon to be followed by edema of the unconsolidated portions of the lungs frothing up through the bronchial tract to produce that ominous tracheal rattle with which we are too familiar—these are the signs of heart failure threatening life.

There can be little doubt that an exhausted nerve center is at the root of most of the cases of cardiac failure rather than mere overstrain from impeded pulmonary cir-

culation, and there are two symptoms which especially tend to heart failure and are largely instrumental in causing the nerve exhaustion which brings it about, viz., a temperature above 104° F. and sleeplessness. It will be generally noted that the failure comes on suddenly; there may have been one or two preliminary warnings of partial collapse with running pulse and cold extremities, from which the patient may rally, but which are generally followed by more severe and often fatal attacks. At the very commencement of such signs ammonia, which the writer's experience would lead him to infer after a few days of usefulness tends to rather produce cardiac depression, should be changed for a mineral acid, of which dilute phosphoric acid is the best. Some digitalis or strophanthus should be added to the mixture, and strychnine should be given separately either in an extra quantity of stimulant or subcutaneously if the absorbing powers of the patient are at all doubtful. But the most powerful remedial agent is oxygen, since it attacks one of the chief causes of cardiac failure by securing a supply of oxygenated blood to the coronary vessels, and the pulse will be observed to become slower and fuller under its influence. It should be at hand in all severe cases and should be given in good time as an occasional inhalation.

Whilst as a rule we need not in pneumonia attach much importance to a high temperature, in any case where heart failure threatens it must be reduced to a safer level—*i.e.*, by a degree or two—by hot or cold sponging, or, if necessary, by the dripping cold pack.

Another question presses at about this time; it is that of sleep. Most cases of pneumonia get frequent short snatches of "dog sleep," which is all that we can expect and serves to tide them on to the crisis; but who has not witnessed that wide-eyed delirious vigil in pneumonia, and especially in influenzal pneumonia, in which the mind is painfully alert and the senses preternaturally acute, sleep being entirely absent? The writer is in the habit of suggesting help for wakefulness in pneumonia in the form of a small dose of ten or twenty grains of sulphonal taken in hot fluid at 8 or 9 P.M., and with this preliminary a twenty-grain dose of bromide taken at 10.30 is often sufficient to secure some restful sleep. When the temperature is high a single dose of from seven to ten grains of phenacetine may be added to the bromide. When delirium is a marked feature hyoscine in doses of $\frac{1}{100}$ grain subcutaneously and repeated once or twice may be used sometimes with great advantage.

Cases of persistent sleeplessness almost invariably prove fatal with heart failure, a running pulse, the cardiac action becoming at last merely peristaltic as the blood-clot accumulates in the auricles. Bromides, chloral, sulphonal, are almost useless, and with the gathering serum in the tubes one hesitates to give opiates. And yet in these severe cases morphine should be given to secure a few hours' sleep and to give the nervous system time to recuperate and to allow of some restoration of heart power before it is too late. The writer states that he has seen some cases in which death appeared to be averted by: (1) a strong dose of food and stimulant; (2) one-third grain morphine with atropine; and (3) aeration being maintained by the oxygen current being frequently played over the mouth and nostrils for a few minutes at a time. The oxygen may be warmed as it enters the bag by passing it through a coil of tubing immersed in hot water. It has seemed to the writer that strychnine has rather favored this peculiar sleeplessness of patients when utterly exhausted, but its power as a cardiac stimulant is unrivaled, and its use in cases severe enough to lead up to this condition is quite essential, and it may be renewed on the effects of morphine passing.

The remarks just made are applicable to heart failure in pneumonia, and the author has endeavored to indicate the measures that tend to avert it and combat it when present. He has not dealt with the treatment of pneumonia in any other sense, for to treat the vast majority of cases of pneumonia with alcohol, strychnine, oxygen, morphine and the like would be at best like storming a mud hut with Armstrong guns; to use dangerous remedies, in cases which require only the gentlest treatment and careful nursing, is a great blunder. The fatigue of heart that follows such tempestuous periods is sometimes very great. It is partly nerve fatigue and is associated with an often greatly depressed temperature lasting for many days. It is in part also muscular fatigue. The pulse either remains quick and very soft or it may become very slow and vacillating. Patients should always remain in bed until the temperature, which after the crisis frequently descends considerably below the normal, has had at least a sufficient interval to return to or near the normal range, and cardiac and nerve tonics such as strychnine, caffeine and the hypo-

phosphites will prove valuable on convalescence. Exercise must be cautiously resumed, keeping well within the limits of fatigue until heart power is quite restored.

Acute heart failure in other diseases and from other causes requires a similar handling, varied to meet varieties in the case. Attention should be drawn to the great value of oxygen inhalations in the treatment of heart failure in old people due to fatty degeneration of the organ. These cases are characterized by the usual signs of a rather large and feebly acting heart, together with irregularity of rhythm, there being perhaps twenty or thirty beats fairly reaching the wrist, whilst amongst them are twice as many beats which only very imperfectly do so. Cheyne-Stokes breathing is another remarkable symptom in these cases, which is especially apt to supervene after any fatigue and to come on during sleep. This form of breathing bears no direct relationship to the pulse and is probably an associated degenerative neurosis. The employment of oxygen inhalations several times in the twenty-four hours has a decidedly strengthening influence upon the heart, no doubt by sending some extra-oxygenated blood through the coronary arteries, and it also lessens the Cheyne-Stokes breathing and refreshes the patient. Strychnine is the most useful cardiac stimulant in these cases.

RATIONAL ETHERIZATION—A STATISTICAL STUDY.

In the *Medical Record* of January 29, 1898, Dr. M. B. BROUNER writes a paper with this title. He summarizes as a deduction from his experience the following:

1. That etherization should be entrusted only to experienced hands.

2. That a special cone is not necessary for successful etherization. The simpler and less complicated the apparatus the better.

3. That the so-called "force method" of etherization is unnecessary, cruel, and oft-times injurious.

4. That vastly better results are obtained by a gradual, quiet administration.

5. That the amount of ether employed should be minimized, preferably given drop by drop after anesthesia has been fully established.

6. That the evil sequelæ are directly proportionate to the amount of ether employed, and indirectly proportionate to the duration of the anesthesia.

7. That the so-called baneful after-effects on bronchi, stomach and kidney are largely overestimated, and in a large degree controllable.

8. That women require a smaller amount of ether, though a longer time to produce anesthesia, than men.

9. That alcoholic subjects require a longer time and a greater amount of ether to produce anesthesia and to maintain it.

THE VALUE, LIMITATIONS AND ALTERNATIVES OF TOPICAL APPLICATIONS IN GYNECOLOGY.

DUDLEY, of Chicago, writes in the *Medical Standard* for April, 1898, upon this subject. He believes that the principal procedures in local treatment are the hot water vaginal douche, tamponade, and intra-uterine applications.

1. *The hot water vaginal douche.* The choice of the syringe, frequency of the douche, time and length of each application, temperature of water, proper use of bedpan, position of patient, and persistence in long continuance of treatment, are all essential factors.

The good results of the douche will be realized only by the strict observance of the following rules in its application as laid down by Emmet:

ORDINARY METHOD OF APPLICATION.	PROPER METHOD OF APPLICATION.
1. The douche is ordinarily applied with the patient in the sitting position, so that the injected water cannot fill the vagina and bathe the cervix uteri, but on the contrary returns along the tube of the syringe as fast as it runs in.	1. It should invariably be given with the patient lying on the back, with the shoulders low, the knees drawn up, and the hips elevated on a bedpan or rubber sheet, so that the outlet of the vagina may be above every other part of it; when the vagina will be kept continually overflowing while the douche is given.
2. The patient is seldom impressed with the importance of regularity in its administration.	2. It should be given at least twice every day, morning and evening, and generally the length of each application should not be less than twenty minutes.
3. The temperature is ordinarily not specified or heeded.	3. The temperature should be as high as the patient can endure without distress; it may be increased from day to day from 100° or 105° to 115° or 120° F.
4. Ordinarily the patient abandons its use after a short time.	4. Its use, in the majority of cases, should be continued for weeks at least, and sometimes for months. Perseverance is of prime importance.

The douche acts as a vasomotor stimulant and as a cleansing agent.

(*a*) Vasomotor stimulant: Emmet attributes the good effects of the douche to the stimulating influence of the hot water on the vasomotor nerves, whereby the dilated, congested vessels are made to contract, the congestion lessened, absorption of morbid products hastened, and local nutrition improved. The effect is the same as that of massage after the Brandt method.

(*b*) Cleansing agent: In pelvic inflammation the vagina is a passageway and to some extent a receptacle for pathological secretions which flow into it from the uterus, Fallopian tubes, pelvic abscesses, from the vaginal mucous membrane, and even from the vulva. Unless kept clean the vagina may become an incubator and a distributing point for bacteria. The value of the douche, therefore, as a measure of asepsis, is self-evident. When local disinfection is required, the douche may have in solution some antiseptic substance, such as lysol, carbolic acid, corrosive sublimate, boric acid, salicylic acid, or peroxide of hydrogen.

The indications of the douche are chiefly in the treatment of chronic pelvic inflammation. The power of heat to stimulate and contract the blood-vessels makes the douche useful in case of uterine hemorrhage. The disposition to extend its use to the routine treatment of a wider range of pelvic disorders should be discouraged.

There are constantly present in the normal vagina great numbers of lactic acid bacteria (Doederlein), whose function is to render the vaginal secretion acid and therefore to make it an unfit culture ground for about ninety per cent. of all pathogenic bacteria. The washing out of the normal germs and their acid secretion opens the way for infection higher in the pelvis. For this reason the indiscriminate use of the douche in the normal vagina is of questionable propriety.

2. *Tamponade.* The principal indications for tamponade are inflammation and hemorrhage.

(*a*) Inflammation: Tamponade in the treatment of inflammation is designed as a means of pressure, as a vehicle for the application of medicinal substances and for drainage. The pressure effect of the tampon is chiefly useful in the treatment of displacements, especially those due to inflammatory causes. This indication is better fulfilled by Brandt's method of massage. As a vehicle for the application of medicaments, the tampon has become a routine factor in gynecology. It is often used as a carrier of glycerin to cause a watery discharge from the genital tract and thereby to deplete the vessels and overcome congestion. How far the good results attributed to the tamponade are due to the curative forces of Nature or the associated systemic treatment is difficult to say.

A tampon which is left in for more than twenty-four hours becomes offensive and a possible hot-bed of infection. It should therefore be removed on the day following its application. Its common, indiscriminate, routine use should be discouraged. Its therapeutic value has been much overestimated. If used at all, it should be applied daily. One or two applications a week have little value, except possibly that of suggestion. Drainage of the endometrium for endometritis by means of the intra-uterine tampon will be mentioned later.

(*b*) Hemorrhage: Vaginal hemorrhage may often be controlled by a tight vaginal tampon. It is, however, better to find and secure the bleeding point. Uterine hemorrhage may demand immediate control. The vaginal tampon which is commonly employed is inefficient and cumbersome. In bad cases it usually fails, and the distention of the vagina by a large tampon interferes with the functions of the bladder and rectum and is a cause of great mechanical discomfort. Intra-uterine tamponade is a more practical, comfortable and effective treatment for uterine hemorrhage. It should be in the form of a continuous strip of aseptic or antiseptic gauze about two inches wide. The cervix having been exposed by a Sims speculum and steadied by a vulsellum forceps, the strip is introduced by a slender dressing-forceps or sound. The gauze should be removed daily, as secretions absorbed by the tampon decompose rapidly and become a powerful source of infection.

If elastic pressure is required, fine lamb's wool is superior to absorbent cotton. For other purposes the continuous strip of aseptic gauze is preferable.

3. *Intra-uterine applications.* The permanent arrest of a long-standing uterine discharge by topical applications to the endometrium is seldom accomplished. The treatment as ordinarily applied does not reach the disease, because it is not only not indicated, but is injurious in the vast majority of cases for which it is used. The prerequisites to safe and efficient intra-uterine applications are a proper selection of cases and a clear pathological indication and definite

appreciation of what the treatment is to accomplish.

The proper selection of cases is arrived at by exclusion. This will lead to the exclusion of at least two large classes of cases:

(*a*) Cases in which the predominant element is local infection, in which there is a distinct purulent discharge from the uterus, and in which the endometrium is an abscess cavity and the uterine mucosa and sometimes the myometrium the wall of this abscess cavity. If there is a systemic element it is relatively insignificant. In such cases direct treatment to the diseased structures is clearly indicated.

(*b*) In the second class of cases the predominant etiological factor is systemic; there may be some degree of infection, but this is not the essential factor and should disappear with the improvement of the systemic condition. The treatment of such cases would be clearly not local but systemic.

For the so-called infectious cases the value of topical treatment has until recently been much overestimated and its dangers underestimated. The milder intra-uterine treatment, as ordinarily practised, is long, tedious, and useless. Local treatment, mild or severe, if frequently repeated with indifferent aseptic care, often sets up new infection or carries the old infection to deeper structures. This may dangerously involve the parametric lymphatics and veins, the myometrium, Fallopian tubes, cellular tissue, peritoneum, and ovaries.

Intra-uterine applications are usually effective in proportion to their energy. Only those which have the power to destroy the diseased structures are capable of arresting the discharge. In doing this, however, they may destroy the endometrium, injure the myometrium, and reduce the uterus to a cirrhotic-like, cicatricial condition. Sterility and permanent irritability of all the pelvic organs are the natural results. Numerous operations have been devised with but little success to reopen the uterine canal contracted by the prolonged application of such agents. Contrast this condition with that which follows an aseptic curettage. In the latter condition the healthy abraded surfaces are all ready to reproduce a new endometrium. The routine application of strong caustics to the endometrium is prohibited.

A principal mode of action of electricity is by cauterization, although it is said to have a deeper effect on the blood-vessels. Its continued use may arrest the discharge, but it is open to the same objection as other caustics. Its chief value is in the soft, flabby, hemorrhagic uterus, especially in the endometrium associated with myoma. The effects of electricity are not limited to the diseased tissue, but may include healthy structures. Its immediate dangers are greater than those of aseptic curettage. Generally speaking the method is not approved.

Intra-uterine gauze tamponade has been extensively used for dilatation and drainage in non-operative cases. Increasing quantities of a narrow strip of aseptic gauze are packed into the uterus at successive treatments until the endometrium has become dilated to a diameter of one-third or half an inch. Such dilatation is said to permit easy and thorough intra-uterine treatment and drainage, especially capillary, when the gauze is in place. The method in the writer's hands has been occasionally successful, but great care is necessary lest the gauze, instead of carrying out septic material, carry it in.

Innumerable drugs and chemicals have been lauded for intra-uterine medication. Carbolic acid and iodine probably meet the requirements in glandular endometritis so far as topical treatment can meet them. In interstitial endometritis ichthyol, although useful, has not entirely fulfilled its early promise.

When the disease is distinctly infectious and chronic, topical and systemic treatment are both inadequate, although both may properly supplement surgical measures. The diseased portion of the endometrium must be removed by the sharp curette. If this operation is thoroughly performed so as to remove the most infectious portion of the endometrium, it is relatively free from danger, offers a reasonable prospective relief, and the curetted mucosa is rapidly reproduced.

The treatment of infectious endometritis, even with the curette, is not uniformly successful. Dilated and obstructed blood-vessels cannot always be restored to their proper caliber; disorganized lymphatics, nerves and glands cannot always resume their normal functions; and regeneration of lost structures is not always possible. In the glandular forms of endometritis the sharp curette offers both a symptomatic and histological cure, but when the disease has progressed to the atrophic stage and the endometrium is physiologically destroyed, only a degree of symptomatic cure is possible. When the endometritis is complicated with extensive chronic

and obstinate pelvic infection, the uterine discharge will persist regardless of curettage or any other intra-uterine treatment, and hysterectomy may be the only way of relief.

The danger and uselessness of topical treatment for the strongly infectious cases is so manifest that few scientific physicians to-day place great value on its use. The situation is, however, quite different in the second class of cases, in which certain systemic conditions are not only the predisposing but the essential etiological factors. These conditions find their chief expression in stagnation of the general circulation; the stagnation is usually associated with disorders of the heart, lungs, liver, and kidneys, and is often found with the uric acid and other diatheses, such as anemia, leucemia, chlorosis, diabetes, gout, and rheumatism. The discharge may come also as a sequel of some acute infectious disease, such as enteric fever, scarlatina, or diphtheria. Not only the endometrium but the mucosa of other organs share in the general condition and become less resistant and consequently more liable to infection.

The uterine catarrh is sometimes apparently a vicarious act. The writer has frequently noticed the cessation or material diminution of a fetid uterine discharge upon reestablishing of the normal functions of the bowels and kidney. Inconsistent as the statement may appear, topical treatment in this class of cases, which clearly do not call for topical treatment at all, has commonly been followed by the best results.

When diligent use is made of topical applications and a cure is effected, it is quite natural to give the credit to that treatment, when in reality the cathartic pill perchance may deserve it; or, in other words, a case of this class may recover in consequence of the proper systemic treatment of the curative forces of Nature, in spite of the associated topical treatment which it did not need and which may even have done harm.

There is a common impression that severe infectious cases should be treated surgically, and that mild, non-infectious cases should be treated by topical applications. The writer takes exception to the latter part of this statement, and says that those cases that are not surgical are generally medical. The endometrium has suffered a vast amount of sometimes mild, generally useless, oftentimes destructive, topical treatment. The uterus has endured an immense amount of abuse, and the absurdity of topical treatment to the endometrium in such cases is evident when we consider that the uterine catarrh is only one of many local evidences of a general condition. A large proportion of the cases belong rather to internal medicine than to gynecology.

AQUEOUS EXTRACT OF SUPRARENAL CAPSULE IN OPHTHALMIC PRACTISE.

KYLE, of Marion, Indiana, reports upon this subject to the *Ophthalmic Record* for April, 1898.

The physiological effect of the extract of suprarenal capsule, when injected into the system or applied locally to the mucous membranes, is as yet imperfectly understood. The chemical nature of the aqueous substance of the capsule is conflicting and indefinite, and the writer states that he is unfortunate in not being able to secure a definite formula. The researches of Gourfein of Geneva, Shaffer and Oliver, and Swale Vincent have gone far to place the extract upon a solid therapeutic basis.

"In the adult the glands are triangular in shape, weighing from one to two drachms, having a cortical and medullary portion, the cortex forming a yellowish shell around the dark red or brown medulla."

Swale Vincent reports a marked physiological difference between the extract made from the medulla and that from the cortex of the sheep or hog. The extract from the medullary portion when injected into mammals was invariably fatal, while that from the cortical portion had no physiological effect.

The powder and extract supplied to the trade is known as saccharated suprarenal gland, twelve grains representing one fresh suprarenal gland. The extract when used in from two- to four-per-cent. solution is a powerful astringent, and in the writer's experience there is no remedy in the oculist's armamentarium that is capable of producing such a remarkable effect. The writer has experimented with the drug in a great number of cases during the past year, and has had no ill-results.

Dr. W. H. Bates, of New York, read a paper before the Section of Ophthalmology of the New York Academy of Medicine, on April 20, 1896, and referred in a concise and interesting manner to the wonderful therapeutic effect of the extract. When used in the eye, nose or throat no smarting or irritation is produced. In the eye there is a sense of

coolness, with no mydriatic or mycotic effect. The conjunctiva, regardless of congestion, turns suddenly pale, due to contraction of the coats of the vessels, and remains so from one to two hours. Nor do we, as verified by Dr. Bates, notice any congestion after the astringent effect has subsided; the conjunctiva, furthermore, manifesting no intolerance from long use of the drug. We notice when applied to the mucous membrane of the nose and throat the same astringent effect as that seen in the eye. For this reason it is especially indicated preliminary to operation upon the turbinates or upon the septum, first, because it has such a decided hemostatic effect; secondly, it prolongs and increases the effect of the cocaine. Furthermore, the writer has found in operations upon the nose, when he has used the extract preliminary to cocaine, that he has been agreeably surprised at the very small amount of cocaine necessary to secure complete anesthesia, and the very little hemorrhage accompanying the operation.

In operations upon meibomian cysts, complete anesthesia of which under cocaine is, as we know from experience, difficult to secure on account of the great vascularity of the parts, we will find by using the extract as indicated that the operation can be done with remarkably less pain than when cocaine is used alone.

The extract is especially indicated in cases of chronic trachoma, characterized by marked vascularity and lacrimation, in pannus, lacrimal inflammation, acute conjunctivitis, panophthalmitis, and iritis. Again, in operating upon the lacrimal duct, complete anesthesia is procured by injecting a few drops of the extract preliminary to the cocaine; the result is so complete that no one should hesitate to give the drug a thorough test.

Care must necessarily be taken in preparing the solution and keeping it thoroughly sterilized. From the nature of the extract we expect it to rapidly deteriorate. To preserve the solution, in addition to frequent sterilization the writer adds a few drops of carbolic acid, or two drachms of an already prepared two-per-cent. phenic acid solution. This makes no chemical change and is one of the few germicides that can be used with the extract. Mercury bichloride cannot be used; when added to the extract it gives a pinkish color, and upon heating turns to a dark red. Frequent sterilization will not alter its physiological effect. It is wise, however, as far as possible to prepare fresh solutions. To do this we take twenty grains of the saccharated gland and a two per-cent. solution of phenic acid; mix, and filter through filter paper. We now have a clear solution of a brownish-red color, which must be kept corked and free from light. Two or three drops in the conjunctiva produce a complete astringent effect. When applied to the mucous membranes of the nose or throat we secure similar results.

In conclusion the author enumerates the variety of cases in which he has used the extract with decidedly beneficial results, both as a hemostatic and as an adjunct to cocaine: Acute conjunctivitis, chronic granular conjunctivitis, operation for the removal of turbinates, exostosis of the septum, polypoids of the nose, pterygiums, meibomian cyst, operations upon the lacrimal duct, removal of necrosed ossicles, and curettement of the attic.

THE TREATMENT OF HEMOPTYSIS.

Treatment of April 14, 1898, contains an article by SAINSBURY on this ever interesting subject. He begins by telling us that to secure local rest to the chest the patient must not talk, except when absolutely necessary, and then must not raise the voice; that the attendants must not whisper, and above all, there must be no whispering outside the door lest alarm reenter.

A little broken ice to suck occasionally will be of value as an assurance to the patient that something is being done, and a reminder that the patient is under treatment.

The treatment of cough will be more important; it will demand attention at once, and by morphine or opium in some form or other it must be reduced to a minimum.

Here we may mention the value of a hypodermic injection of morphine. This, as Douglas Powell insists, is very serviceable in cases of large hemoptysis attended by much shock and alarm, composing as it does the nervous system generally, and so quieting and regulating the circulation; it will, moreover, check any disturbing cough. Opium, then, or morphine, by the mouth or hypodermically, will be perhaps the first consideration after the securing of rest.

The bowels will next claim attention. It is well recognized that constipation is liable to be attended by a raised blood-pressure, and that a brisk purgative will quickly remove this tendency; if, therefore, the patient be constipated, some purgative—best a saline—should be administered. Even in the ab-

sence of constipation this treatment is beneficial. A quiet, well ventilated room, cool as to temperature, and the above simple measures will secure for the patient favorable conditions. The nourishment should be very bland and unstimulating, and liquid (for one reason because of the ease of administration). Milk cannot well be improved upon; it should be taken cold or cool. Alcohol must be avoided as far as possible, but our hand may be forced if the collapse be extreme.

And now to consider more active treatment. It is admitted that we cannot get directly at the bleeding point, but can we indirectly by the reflex arc reach the bleeding area? Can we throw a stimulus from the surface, external or internal, on to the vessels of the lung?

Bradford and Dean's investigations have shown that the lesser circulation is under vasomotor control, but Osler is right in stating that as yet our knowledge on this subject is very imperfect, and in particular in respect of the relationship between the blood-pressures in the systemic and pulmonary circuits. Still we act upon the theory that we can influence the vessels of the lung by surface stimulation, and so far as the mucous membrane of the trachea goes, Rossbach's investigations seem to furnish proof of this. Accordingly we may apply to the chest the ice-bag, or we may apply very hot flannels, the stimulus yielded by either extreme acting probably in a similar manner. Should the application be continuous or intermittent? This is an important point. Rossbach's experiments showed that the blanching of the mucous membrane of the trachea caused by the external application of cold was not maintained with the prolongation of the application, but gave way to a congestion, venous in type. On this ground, then, as also on the grounds of common sense, which would urge that to get a reflex the nerves upon which we are acting must be neither benumbed by cold nor exhausted by heat (if we use the latter), we should employ temperature extremes intermittingly. We may reasonably, then, apply the ice-bag to the chest of the patient for half an hour at a time, at intervals of half an hour or an hour. We would suggest that in cases of extreme collapse the hot application similarly applied might with advantage be substituted.

Counter-irritation by fly-blisters or the mustard leaf is a perfectly safe, and in some cases apparently an efficacious, treatment. The mode of action will be doubtless in part by a reflex, in part perhaps by the surface, filling of the vessels of the skin. If the latter action does play an appreciable part, the larger the area of stimulation the better. Dry cupping is sometimes applied; its mode of action will be principally derivative, by the filling of the vessels of the skin and of the integuments generally.

Without disturbing the patient, and with satisfaction to him, and without any likely interference with other treatment, the ice-bag may be applied, or the hot flannel, or the counter-irritant, or the dry cup—there is no complication in all this, and the moral effect upon the patient is undoubtedly good.

Thus far the patient has had no medicinal treatment, if we except the hypodermic injection of morphine or the cough lincture, and possibly the aperient, all of which treatments are not of routine but as occasion may direct.

Now, do we possess any drugs which can control bleeding from the lungs? Here we come to the parting of the ways—the oracle of Apollo emits an uncertain sound. Our choice lies in two directions: On the one hand the pointer indicates drugs such as ergot and digitalis, which contract the arterioles and raise blood-pressure; on the other hand, it directs us to drugs such as aconite and to nauseants such as ipecacuanha, which dilate the arterioles and lower arterial pressure.

Theory can justify the use of either, inasmuch as hemorrhage depends on two factors, viz., the rent in the vessel or vessels, and the plus pressure on the same. Contract the vascular area in which is the bleeding point and *ceteris paribus* the escape must diminish; lower the general blood-pressure, and again, *ceteris paribus*, the bleeding must diminish. But the *ceteris paribus* cannot be granted, for at the same time that aconite lowers the blood-pressure it leaves a more lax open state at the periphery—a more open door; and at the same time that digitalis contracts the periphery it raises the blood-pressure, thereby increasing the escaping force. So far as theory is concerned, the whole question turns upon the position of the bleeding point; if this be in the capillary area or in the terminal arterioles, then theoretically the use of the digitalis and ergot group is eminently reasonable, for the local contraction is likely to outweigh in effect the general rise in blood-pressure—but if the bleeding be from a vessel of size, and a portion of that vessel be aneurismal, then the use of digitalis and ergot is most irrational, for the

area of contraction will not include the bleeding point, and the rise of blood-pressure, it would seem, can only favor the bleeding.

To apply these considerations the first need is of a better diagnosis—the possibility of distinguishing between a capillary or an arteriole oozing and a hemorrhage from a vessel of size. Osler says: "When the blood is brought up in quantities—in mouthfuls at a time—it is almost certain either that an aneurism has ruptured, or that a vessel has been eroded." This is too sweeping, for Fagge's case of miliary tuberculosis with no gross vascular lesion proves that without such the hemorrhage may be copious and even fatal, and some of the cases of phthisis ab hæmoptöe have shown an abundant hemorrhage as an initial symptom with no physical signs of gross pulmonary lesion. It will be best, therefore, to qualify Osler's statement by the addition: if the case is of long standing clinically, or is accompanied by well-marked physical signs. In such case theory would say, "Withhold ergot and digitalis." But if the case be one of large hemoptysis as an early or initial symptom with few or doubtful physical signs, theory would confirm the use of ergot, for the bleeding is probably from small vessels.

The truth, however, is that we are not yet in a position to treat hemoptysis scientifically in respect of these two classes of drugs, and that whilst we must make every endeavor to be more precise in the reasons for our selection, at present the choice is more or less a random one. On the whole, there is a general agreement that in severe cases of phthisical hemorrhage of all kinds, ergot is perhaps the most reliable drug, administered in full dose, initially, of the liquid extract (two to three drachms), and afterwards in smaller dose of twenty to thirty minims every hour for a few doses (Douglas Powell); or hypodermically in full dose, fifteen minims of the official solution of ergotin (Bonjean), or ergot aseptic —equals four to five grains of ergotine. The hypodermic injection is the more potent agent; it should be made deeply into the muscles. The subsequent action may be maintained either by injections or by doses of the liquid extract, say twenty minims every half-hour for a few doses.

The use of digitalis is indicated in the same class of cases as that which calls for the use of ergot, but we do not know that it possesses any superiority over ergot, and in general it is a drug which develops its effects slowly. Whitla thinks it is useless in an emergency, but excellent where the hemoptysis is not large, but persistent. If employed as a means of controlling a sudden large hemorrhage it it should be given hypodermically, twenty to thirty minims of the tincture, the dose to be repeated in half an hour if need be. Wood states that thus given its action develops rapidly. Tincture of hamamelis is certainly useful in hemoptysis, and may succeed when other remedies fail. It is indicated in cases of small but persistent blood-spitting. We are quite in the dark as to its mode of action. Hamamelis may be given in ten- to twenty-minim dose every four or six hours, or the distilled extract of witch-hazel may be given up to two drachms twice or thrice daily, or in more frequent smaller dose.

The use of astringents, *e.g.*, gallic or tannic acid, or of alum or subacetate of lead, is a routine treatment with many. In employing such we must not forget Whitla's advice that in urgent bleeding the remedy must be repeated frequently, and the initial dose be maximal, *e.g.*, of gallic or tannic acid twenty or thirty grains, in one ounce of water, at once, and subsequently a teaspoonful of such solution every twenty minutes. Astringents will tend if anything to raise the blood-pressure, and therefore will associate themselves rather with ergot and digitalis, and both treatments may be combined. If lead be employed, its tendency to lock up the bowels must be watched and corrected. Quite in the opposite direction lies the treatment of hemorrhage by such drugs as aconite and nauseants, yet these have their advocates. The mode of giving aconite will be small and frequently repeated doses, but we have more knowledge of the use of ipecacuanha and of antimony in nauseant or emetic dose, and amongst those who have strongly advocated this method is Trousseau, who has thus revived the practise of Cullen and Willis, of Stoll, and of others. Dujardin-Beaumetz, who also admits the value of this treatment, keeps it in reserve as a last resort. Trousseau's method was to give ten to fifteen grains of powdered ipecacuanha every eight to ten minutes for some four to six doses, so as to cause strong vomiting; he would repeat this treatment without hesitation subsequently if need were. A modification of this treatment, adapted to milder cases, is to give the drug in nauseant dose only, *e.g.*, two grains of ipecacuanha every ten minutes.

Common salt, which is recognized as a remedy in hemoptysis, acts probably in the

above way; it should be given in one-half to one or two teaspoonful dose dissolved in a very little water; the dose to be repeated till the patient is nauseated.

Here venesection may find its place, a remedy which has at times seemed to control the bleeding in very severe cases. There is no more potent means of lowering blood-pressure. This and the emetic or nauseant treatment will be more clearly indicated in proportion as the patient is more full blooded and the circulation more excited.

The application of firm ligatures around the thighs and the upper arms appears in some cases to have been effective; the *modus operandi* is perhaps by starving the pulmonary circulation by the arrest of the blood returning from the limbs. If this be the explanation this method also will secure a lowered blood-pressure.

To conclude this brief sketch Sainsbury refers to a more recent method which attacks the problem from quite a different point of view. It seeks neither to close the rent in the vessels nor to reduce the blood-pressure, but to heighten the coagulability of the blood generally, and so to favor thrombosis at the bleeding points. This is the treatment by chloride of calcium, which, based on physiological findings, has been developed chiefly by Professor Wright, of Netley. The salt must be given in full dose, fifteen to forty-five grains every four to six hours, or in great emergencies twenty to thirty grains, as an initial dose, and then four to five grains every quarter of an hour for a few doses subsequently, as above. One point of importance must not be omitted. Professor Wright's investigations have seemed to indicate that the coagulability of the blood increases during the chloride of calcium administration up to a certain point, and then declines and may fall even below the normal. Should this be established it will be necessary to administer the salt intermittently. For three or four days the coagulability increases, according to Wright; therefore, during a period not exceeding this, the drug may be given, dissolved either in water or milk, or with the addition of some compound extract of licorice. Chloride of calcium is thus employed at the Victoria Park Hospital.

THE TREATMENT OF POISONING BY CARBOLIC ACID.

La Presse Médicale of March 19, 1898, tells us that LANDOUZY gives the following directions as to the treatment of this condition: Inject immediately by hypodermic syringe thirty to sixty minims of sulphuric ether as a stimulant. Use a rectal injection of two ounces of sulphate of sodium in three pints of filtered water, irrigating the bowel as high as possible after the manner of Cantani. Administer by the mouth or by means of an esophageal tube one ounce of sulphate of magnesia in a quart of hot water, as this will form an innocuous sulpho-carbolate with the carbolic acid. It may be necessary, also, to bleed the patient and then to perform intravenous transfusion or hypodermoclysis, the injection consisting of 300 grains of chloride of sodium in a quart of boiled distilled water. Morphine and heat should be applied to the extremities, and if the fluid which has been injected into the rectum to wash it out has passed away, a small injection of strong black coffee should be given as a respiratory stimulant. Tea and hot punch may also be administered.

A NEW OPERATIVE TREATMENT FOR HEMORRHOIDS, WITH REPORT OF CASE.

J. K. SIMS in the *Maryland Medical Journal* of May 7, 1898, tells us that having made a careful study of the various operations that have been adopted for the radical cure of hemorrhoids, he finds them all subject to various objections, viz., they leave a stump that must slough off, or an open wound that must heal by granulation. This, in a location like the rectum, which cannot possibly be kept aseptic for any length of time, must naturally be a slow process, and in addition to this there is the possibility of serious systemic poisoning should these open wounds become infected with pathogenic microbes. Again, wounds that heal under suppuration leave a great amount of cicatricial tissue to contract and distort the organs.

The operation which the writer proposes, if properly done, will to a great extent overcome these objections. It takes more time and care and is more difficult to perform, but the advantages gained by the patient more than compensate for this additional work. Of course, it may not be applicable to every case, but with suitable modifications it may be made applicable to the majority of cases of both internal and external piles, as well as to polypi and other benign neoplasms of the rectum and anus.

The patient should have a gentle mercurial

purgative on the two evenings previous to the day of operation and a saline each morning before breakfast. This will clean out the bowels and open up the portal circulation, so that we can give the rectum a long rest afterwards. The circum-anal region should be shaved and scrubbed clean and the rectum washed out with a large enema of warm soap-suds or carbolized water. A warm bath is given and clean linen put on. The anesthetic is now administered, after which he is placed in either the lithotomy or the Sims position. Then introduce a speculum (Cook's and Mathews' are the best) and divulse the sphincters as widely as the instrument will distend them. Then with the thumbs still further stretch until completely paralyzed. The piles will now present themselves, but not in their entirety; they should be everted as much as possible and the rectum and circum-anal region well irrigated with a 1-to-2000 mercuric chloride solution. The tumors, one by one, are now caught with four-pronged forceps, pulled out, and held by the assistant; then with a sharp scalpel the mucous membrane is cut through, around the base of the pile, and a silk ligature tied tightly (in the groove made by the incision), including only the blood-vessels and connective tissue. The pile is then cut off close to the ligature, leaving only enough to hold it, and the cut edges of the mucosa are brought together over the stump with continued sutures of catgut. If the tumor is large, with a curved needle pass a double suture through its base and ligate it in two portions; then the mucous membrane is sutured as above.

If there are external piles present also, the same method may be used to remove them, if large and vascular, or if due to a thrombus; but if they are small or are much indurated they may be simply cut off close to the skin, any bleeding points caught with forceps and ligated, the cut edges brought into close apposition with interrupted sutures of silk. The field of operation is again irrigated with a hot bichloride of mercury solution, the parts dusted with iodoform or aristol, the mucosa pushed in well and a small piece of iodoform gauze inserted, leaving the end protruding from the anus. A pad of gauze is placed over the anus, and over this a pad of absorbent cotton is bound firmly with a T-bandage. A hypodermic injection of morphine $\frac{1}{4}$ grain, with atropine $\frac{1}{150}$ grain, is given and patient put to bed.

The bowels should not be moved for three or four days, by which time the wounds should be nearly healed; they should then be moved by salines and enemata. The advantages claimed for the operation are that by leaving only closed wounds, made under antiseptic precautions, we lessen the risk of suppuration and perhaps more serious infection; that they heal in a much shorter time and with less pain and suffering; there is less danger of hemorrhage and of distortion, and perhaps neuralgia, of the rectum, from contraction of the cicatricial tissue.

In regard to external piles the writer emphasizes the advice given by Dr. Mathews in his admirable work on the rectum: "Remove all of the tumor, cutting it off close to the skin," instead of merely snipping off a small portion of it, as is advised by most authors. If small ones are left they are apt to become inflamed, and they, as well as the stumps left, tend to get much larger, often necessitating another operation to remove them.

THE TREATMENT OF INCOMPLETE DEVELOPMENT OF THE UTERUS.

The *Brooklyn Medical Journal* for May, 1898, contains an article by A. J. C. Skene on this topic. As he well says, cases of flexion of the uterus are unfortunately rarely seen during the stage of development. The condition is usually well established before the patient presents herself to the surgeon or physician. More than that, the other complications that are so sure to follow this malformation are usually established before they come under our professional care — that is, general pelvic hyperemia and catarrhal endometritis, conditions or affections which are developed from the deranged innervation and circulation, pain and suffering that arise from or are caused by the malformation and consequent dysmenorrhea. It is also a common thing to have (in addition to the general hyperemia of the uterus and a catarrhal endometritis, or it may be adenomatous corporeal endometritis as well) ovarian hyperemia, that in time is likely to run into chronic ovaritis. When such patients can be taken in hand before these complications are established, and the age of the patient is favorable, say anywhere between fifteen and twenty, they can usually be completely relieved; not only that, but they are likely to remain perfectly well. In such cases, when their history is sufficiently clear to enable one to make a diagnosis with a certain degree of positiveness, he prefers to anesthetize,

and then complete the diagnosis and employ the treatment that may be called for.

In the first place, the author states that the most absolute cleanliness and asepsis should be observed in the management of these cases, and when there is no opportunity to cleanse the parts by douches and bathing before the patient is anesthetized, then that thorough cleansing process should be carried out during the anesthesia. Then the examination should be made, the form of flexion clearly made out, and the treatment adapted to the condition found. For example, in case the uterus is found to be rather lax or soft of tissue and the flexion is limited to the body of the uterus, and there is menorrhagia, as there often is in those cases, then the treatment should be moderate—rapid dilatation, curetting to remove any hypertrophic or adenomatous tissue that may exist there, and washing out the uterus with a solution of carbolic acid, glycerin, and water. The dilatation should be to the extent of three-quarters of an inch, or less, say half an inch, according to the size of the uterus; then in place of packing, as recommended by some, he employs a drain, which also acts as a splint—that is to say, a piece of gauze as large as can be admitted into the dilated canal, well twisted and carried up to the fundus uteri and then cut off short at the os externum. This is allowed to remain and keep the uterus in proper shape as long as it is tolerated. The moment that any irritation occurs, indicated by elevation of pulse or temperature, it is to be removed, and if the uterus is disposed to fall back into its flexed form, the packing should be repeated. The packing with the twisted gauze acts not only as a drain but as a splint, and is usually quite sufficient to keep the uterus straight in those cases of soft-tissued uteri and in forward flexion of the body of the uterus alone.

When the flexion forward is confined to the body of a uterus that is unusually dense in structure (and these are the most troublesome cases, because the dysmenorrhea is almost always severe), the treatment is conducted upon the same principles, but carried out in a somewhat different way. In these cases the tissues are so dense and unyielding that unless the greatest possible care is taken there is great liability to laceration of the inner structures of the body of the uterus, and also of the lowest portion of the cervix. When a dilator is used that is too short, the blades of which dilate in a parallel way, if they do not extend to the fundus or near to the fundus the points of the blades are liable to become embedded in the walls of the uterus, as dilatation goes on, and do very great damage. Very great care should be taken to make the dilatation equal from the os externum up to the entrance of the Fallopian tubes. More than that, it is necessary in these cases to make the dilatation greater in a uterus of dense structure. Of course, the degree of dilatation must depend upon the size of the uterus. Often the uterus is small and dilatation to the extent of half or five-eighths of an inch is as much as can be employed, whereas in a larger organ dilatation to an inch or less might be equally well tolerated. While the dilatation is done under an anesthetic and is completed in the shortest period of time, yet it should be conducted very slowly and gradually, watching carefully that the tissues are stretching and not being lacerated. In case the misfortune of laceration does occur, in spite of all care, the cases usually do badly, or at least not as well as if that accident had been avoided. After the dilatation has been completed, in the same way as in the other condition just described, the same drain is introduced and allowed to remain as long as it is agreeably tolerated. It is repeated again if the uterus is inclined to fall back into its former position, although in all cases of that kind it is impossible to introduce as large a piece of twisted gauze as the first was. In the great majority of these cases there is usually amenorrhea or scanty menstruation, and hence it is not necessary to use the curette, but simply to use the gauze in the way already described.

In the majority of cases just described the treatment here given is sufficient, but if at the next menstrual period there is still dysmenorrhea, and on examination it is found that the flexion has returned in part or entirely, then it is necessary to employ the stem pessary for a time until the tissues at the weak point shall regain their strength and increase in quantity. The stem pessary which the writer employs is the glass rod with a flange at the end of it, choosing one that is long enough to extend up to within about a quarter of an inch of the fundus uteri, and holding it in place by a Peaslee's ring pessary closed in on one side so as to form a cup. A soft-rubber pessary is more easily introduced because it is flexible, and it is more easily borne, and by the use of the douche it can be kept reasonably aseptic, provided it is thoroughly coated with white vaselin before it is introduced.

While the patient is wearing this kind of

support it is very necessary that she should be under continual observation, and that is one argument in favor of treating these patients in hospitals, where they can be closely watched. The writer refers to the fact that many have permitted patients to go around about their usual duties or occupations wearing stem pessaries, but he has never dared to take such risk, and for that reason, perhaps, he has never had any very serious accidents follow their use. Last summer he saw a lady in the mountains suffering intensely from a pelvic inflammation caused by a stem pessary introduced by a New York practitioner who has repeatedly claimed in his writings that he is the most successful surgeon in the business.

In regard to the class of cases now under consideration—that is, forward flexion of the body alone, uncomplicated with endometritis, or ovaritis, or anything of the kind—this treatment is usually sufficient to relieve the dysmenorrhea and overcome the sterility in the majority of cases. The writer was quite surprised to find how many of these patients were cured of their sterility; and yet some, quite a number in fact, have not been cured. There are others who keep well for a time and then the dysmenorrhea returns. This is especially so in cases of the hard or dense-structured uteri, and especially if there are some rudimentary small fibroids in the walls of the uterus. These cases are the most difficult to cure, and they are most likely to have a return of their trouble. The others are much more satisfactory in this respect.

AMPUTATION OF THE PENIS; DESCRIPTION OF A NEW TECHNIQUE.

RAMON GUITERAS, in the *Journal of Cutaneous Medicine and Genito-Urinary Diseases* for May, 1898, writes on this topic, and states that it is his purpose to speak simply of anterior operations, and not the so-called extirpation where the whole organ is removed and a urethral orifice is made in the perineum.

Many methods of performing this amputation have been devised, which tend to show that, although the operation is a simple one, surgeons are not as yet satisfied with the results.

These operations differ principally in the methods advocated of making the flaps, and in the instruments used. In the first instance some operators recommend the circular, the antero-posterior, or side flaps, while others have advised no flaps at all, excepting what can be obtained from the redundant tissue. In the second instance amputation is performed by means of the ligature, the écraseur, the galvanic cautery, the galvanic écraseur, or the knife.

Many authors have written upon this subject, among whom are Sir William Ferguson, Pearce Gould, Bonner, Erichsen, Humphrey, Earle, Teale, Demarque, Hilton, Treves, Bryant, Stimson, and Bell. Most of these surgeons seem to agree upon one point, and that is that the urethra and the skin should be allowed to remain longer than the corpora cavernosa. They have not, however, mapped out any systematic operation, and for this reason it is the author's purpose to outline the one which he has been in the habit of teaching at the post-graduate school during the last few years.

Before entering into this description it might be interesting to consider briefly the principal difficulties attending this operation that make it so unsatisfactory. They are:

1. Hemorrhage.
2. Retraction of the orifice of the divided urethra within the stump.
3. The narrowing of the orifice by the contraction of the superficial tissue.
4. The wetting of the wound by the urine.

To overcome the first of these, namely, hemorrhage, it is necessary to tie a rubber band or an elastic catheter about the base of the organ until the amputation has been completed, when the dorsal arteries and those of the corpora cavernosa should be caught and ligated with catgut. Any further hemorrhage can be controlled by hot water, peroxide of hydrogen, and the pressure made by the dressing on the flaps.

In regard to the second of these difficulties—the retraction of the orifice of the urethra into the stump—this can be guarded against by cutting the urethra at a lower point (nearer the meatus) than that where the penis is amputated. This is quite generally advocated, and it appears to be the general concensus of opinion that one-half inch is the excess in length to be allowed.

The third difficulty is the narrowing of the orifice by the contraction of the superficial tissue. This is probably the most serious obstacle that the surgeon has to contend with, and operators often try to overcome it by slitting up the lower wall of the urethra and then stitching its mucous membrane to the skin. This certainly makes a large orifice, but the urethra above the point

to which it has been incised is more or less distorted, so that a stricture is liable to occur there, as is the case with most other devices that have, up to the present time, been resorted to. Such a stricture or contraction is even worse than a simple contraction of the orifice, as it extends half an inch or more into the anterior urethra. It seems, therefore, that if the end of the cut urethra protrudes sufficiently and is then well united with the adjoining skin, a better formed meatus will result, and if a stricture of the orifice does take place it can easily be treated by a meatotomy, followed by a dilatation, as in any other case of contracted meatus.

In regard to the fourth difficulty—that is, to the wetting of the parts by the urine—this is a hard matter to remedy, and always interferes with the healing and union of the approximated edges. The best way of overcoming that difficulty is by means of a soft-rubber catheter, which should be passed into the bladder and allowed to remain there for several days. A retained catheter is, however, in every instance objectionable, as independent of the danger of wetting the part with the urine and the urethral fever it may occasion, the pressure it exerts upon the united surfaces tends to cause a slough about the stitches. It is, therefore, hoped that some method will soon be discovered which will supplant that of catheter-drainage in these cases. If any urine does succeed in wetting the united surfaces it should be immediately washed away and the parts cleansed with a boric acid solution.

The method of operating presents no new features when considered *in toto*, but is of a more careful technique than any which has been described heretofore. It is briefly as follows:

The parts having been thoroughly cleansed after the methods of to-day, a rubber band or catheter is tied about the base of the penis, and a circular incision is made through the integument of the organ at a point below the growth where it is healthy. The skin is then dissected back for three-quarters of an inch, thus making a flap, which is rolled upward toward the base of the organ. A sound, about a No. 20 (French) in size, is then passed into the urethra, and held by an assistant in such manner that the penis is at a right angle to the body.

The blade of a straight bistoury is then inserted with the cutting edge pointing upward at the point to which the flap has been rolled, and is worked in between the urethra and the corpora cavernosa until it comes out at a corresponding point at the other side. The blade is then turned toward the corpora cavernosa and is made to cut through them. The corpora cavernosa are then taken between the fingers of the left hand and traction is exerted upon them while they are being dissected away from the urethra for the distance of one-half an inch. The cutting edge is then turned toward the urethra and, the sound having been withdrawn, it is cut through at this point.

Thus we will see that the operation, as far as it has advanced, consists of an amputation through the anterior part of the organ in such a way that the stump or divided corpora cavernosa has a urethra half an inch longer than itself, and an integumentary flap three-fourths of an inch longer.

The two dorsal arteries and the two arteries of the corpora cavernosa are then caught and ligated with fine catgut, also the small artery of the septum, if present, and any oozing of blood is controlled as well as possible by peroxide of hydrogen or hot water.

The margins of the cut integument at the upper and lower surfaces of the organ in the median line are then caught with the thumb forceps, and traction sutures are passed through each of them at these points, and held by assistants.

The urethra is then caught in the same way above and below the median line, and traction sutures are also passed through it and held by assistants in such a manner that the middle of the cut surface of the urethra corresponds to the junction of the lower and middle third of the cut surface of the integument.

A fine silk suture is then passed through the integument and urethra at each extremity of the canal, passing entirely through the walls of the integument on either side, but only through the walls of the urethra and not through its lumen. These are then tied, thus holding the urethra and skin in place in the relations already mentioned. The integument above and below the urethra is then united by interrupted sutures.

After this, four sutures of fine silk are passed through the integument and the urethra, piercing the lumen. They are then pulled up in the middle and tied on either side. Thus we will see that the skin and urethra are held together by ten sutures, four on each side and one on each extremity, well placed with thorough approximation.

The parts are then washed with sterilized

water and the traction sutures are withdrawn, thus leaving a stump. A sound is then passed through the new canal into the bladder, after which a No. 10 French catheter is passed into the viscus and allowed to remain there for a few days.

The wound is then dressed with iodoform gauze and the catheter is held in place with a piece of adhesive plaster attached to the pubes. Extirpation of the inguinal glands should also be made in cases where these can be felt. The chain of glands implicated, which are found in these cases, are those of the horizontal and vertical sets.

DIPHTHERIA ANTITOXIN AS AN IMMUNIZING AGENT.

W. M. DONALD writes in the *New York Medical Journal* of May 21, 1898, on this important subject. He is a firm believer in the immunizing power of antitoxin for at least several weeks following its use; but since a large amount of skepticism is rampant among the profession with regard to this power, and since a number of the better men are questioning it, he feels it necessary to give a reason for the faith that is in him. As such, then, and as a contribution to statistical facts upon this moot point, the following records are presented:

On April 2, 1896, a case of laryngeal diphtheria was discovered at the Detroit Protestant Orphan Asylum. During the next seven days, and despite the most rigid isolation and watchfulness, seven new cases developed. Immunizing doses of antitoxin (two hundred and fifty units of Parke, Davis & Co.'s antidiphtheritic serum) were then administered to the remaining eighty-seven children, with the result of practically stamping out the disease at once. Ten days afterwards, it is true, one case of pharyngeal diphtheria developed, but the other eighty-six cases remained immune.

During January, 1897, a similar outbreak occurred during the attendance of Dr. Douglas. Before it could be controlled five cases of laryngeal diphtheria had developed, two of which proved fatal.

The selective preference of the germ for the larynx in these cases, as well as the sudden outbreak of the poison (all the cases developing within three days), are matters of interest.

At this time antitoxin in doses of five hundred units was administered to seventy-one children, and in doses of two hundred and fifty units to nine—the latter being the very young, from two to five years of age. The result in this series was even better than in the preceding one—none of the eighty children developing diphtheria after the injection of antitoxin.

In December of the same year, and during the author's service, another outbreak occurred, two cases being discovered on the 27th and four more on the 29th. On the 31st, assisted by his friend, Dr. E. M. Houghton, he immunized seventy-nine children—twenty-five of the younger children with three hundred units and fifty-four of the older with five hundred units of antitoxin—with the result that four days afterward one child who had received the larger dose, a girl of seven years of age, showed well marked faucial diphtheria; the other seventy-eight children remained well.

Out of the two hundred and forty-six children immunized during these three periods, four developed urticaria of moderate severity and three a slight general erythema. These untoward symptoms passed away in about twenty-four to forty-eight hours, giving no further trouble.

In one case on the last date, December 31, 1897, a hypodermic needle of small size was broken in the buttock and could not be recovered. At this writing, almost five months afterward, no symptoms referable to this foreign body, reluctantly allowed to remain in the tissues, have been manifested. The child is under observation and will be watched closely for further report. After each series of immunizations a number of cases of suspicious sore throat developed, with whitish exudates upon the tonsils, but bacteriological examination revealed only cocci, and no Loeffler germs present in any case.

The writer calls attention to the fact that none of these series of immunizations were conducted immediately upon the appearance of a single case of diphtheria, which might have been considered a sporadic waif, and from which no further cases might have arisen; but that on each occasion several days were allowed to elapse after the first manifestation of the disease. During this time the most rigid system of inspection was instituted—every throat in the institution being examined each morning—and every other precaution taken to prevent the spreading of the disease. Despite these measures the disease spread in each of the three outbreaks reported, and refused to be controlled

until the immunizing doses of antitoxin were administered. After that period, as reference to the above reports will show, the disease was controlled without trouble.

The author also calls attention to the varying dose of the antitoxin employed—two hundred and fifty, three hundred, and five hundred units. This was in the nature of an experiment to determine, if possible, the best immunizing dose.

It will be observed that practically as good results were obtained from the smallest dose as from the largest; one case developing after the use of two hundred and fifty units, and one after five hundred units.

We have thus a percentage of failures of only four-fifths of one per cent. in the whole number reported; certainly a most gratifying showing.

THE PRESENT STATUS OF HYSTERECTOMY AFTER THE MENOPAUSE.

J. T. JOHNSON contributes to the *National Medical Review* for May, 1898, a paper on this gynecological topic. He believes that the present status of hysterectomy after the menopause is just about the same as the status of hysterectomy before the menopause.

Since accumulated experience has shown that the "change of life" has very little if any influence in arresting the growth of uterine fibromata in a large number of cases, we cannot count with any degree of certainty upon its favorable influence in any given case. For this reason we cannot now truthfully say to a patient seeking our advice on account of a troublesome fibroid that, as she is nearing the average age for the cessation of her menstrual periods, her tumor will soon cease to annoy her, and will disappear altogether when the change of life is fully established. Indeed, many examples of their rapid increased growth have occurred in the writer's limited experience when the patient had passed the thirty years of menstrual life allotted to the average normal woman.

Uterine fibromata prevent the occurrence of the menopause at the usual age of forty-five to forty-seven, and keep up the monthly periods as well as prove a fruitful cause of intermediate hemorrhages, at a time in the woman's life when she is by nature least able to stand such losses of blood.

Not only does menstruation continue in fibroid cases until the woman is between fifty and fifty-five years of age, on account of the irritation and congestion caused by its unnatural and offensive presence, but the tumor too frequently takes on an increased growth, becoming larger and more troublesome than before the menopause occurred.

It is quite possible in these cases that the popular idea that the menstrual blood, instead of escaping as it formerly did, now goes to feed the tumor has some foundation in fact. One of the strongest indications for hysterectomy after the menopause is the tendency of the tumor to undergo some form of degeneration which of itself may prove fatal to the long-suffering patient.

The writer has operated on two women with large fibroids, who were both over sixty years of age when the hysterectomy was done, on account of the calcareous degeneration of the tumor. After removal they could not be cut open with a knife or chisel they were so hard, and were only finally opened up with a saw.

Sarcomatous, carcinomatous and cystic degenerations occur, and they also break down by the formation of internal abscesses.

The writer recently presented a 21-pound fibroid tumor to the Medical Society of the District of Columbia, which he removed from a lady fifty-seven years of age, and which contained several pints of bloody pus. The Microscopical Committee of the Society reported that the specimen had undergone a sarcomatous degeneration. While the patient made a good recovery, there can be no doubt that if hysterectomy had been delayed much longer she would certainly have lost her life. It is no uncommon thing in reading the accounts of hysterectomies in the medical journals to notice that the age of the patient was stated to be over fifty. Indeed, Dr. Baer, of Philadelphia, the distinguished originator of "Baer's operation," some time ago remarked: "A large proportion of my hysterectomies were upon women who had passed the menopause." Several papers have recently been published upon this subject, notably one by a member of the District of Columbia Medical Society, and another by Dr. Kelly, of Baltimore.

The age of the patient is no bar to hysterectomy. If a woman has a fibroid tumor threatening her life, or seriously menacing her health by hemorrhage, pressure, degeneration, obstruction of the bowels, peritoneal dropsy, or what not, it should come out no matter whether she is thirty or sixty years of age. Hysterectomy should be done in any and all cases for actual or prospective symp-

toms without reference to age or whether the menopause has or has not occurred. The mere presence of a uterine fibroid which produces no symptoms is not a sufficient indication at any age for so radical an operation as hysterectomy, and, *per contra*, dangerous and threatening symptoms on account of malignant disease or a fibroid tumor of the uterus should be met by the complete removal of the growth, even if the entire uterus were involved in the ablation, notwithstanding the fact that the menopause has occurred.

The mortality of this operation, when uncomplicated by malignancy, in good hands and in favorable environments, should not be more than five per cent. The fatal cases are mostly in that class where delay has resulted in the formation of dangerous adhesions, exhausting complications, and death-producing degenerations.

While a certain number of fibroid tumors are favorably affected by the menopause, those which remain unaffected by the change of life are more liable to take on an increased growth, or as stated above, to undergo one of the forms of degeneration already referred to.

The present status of hysterectomy after the menopause is that it should be resorted to whenever the usually accepted symptoms present themselves which gynecologists the world over acknowledge to be of sufficient gravity to require that operation in any other period of life. These indications being present, the operation is less dangerous than the continuance of the symptoms. Ovariotomy is a very successful operation in old women; there seems to be no reason why hysterectomy should not be equally successful.

TREATMENT OF DYSMENORRHEA.

KEITH in the *British Gynecological Journal* tells us that uterine dysmenorrhea is caused by a malformation of the uterus, due to want of proper development. To this is added the thickening of the mucous membrane, along with congestion at the time of the menstrual flow.

It is the bend, plus the thickening of the mucous membrane and congestion, which is the cause of the pain; consequently treatment must be directed either to straightening the bend or reducing the circulation.

The usual history is that the patient has suffered from pain every month since she began to menstruate, the pain commencing with the onset of the flow and abating when the flow is fully established.

In old standing cases there will be leucorrhea, and perhaps some menorrhagia.

If married, the patient will never have been pregnant.

On examination, an anteflexion of the uterus is almost certain to be found. If, however, the dysmenorrhea did not commence until after puberty, in addition to the bend something will be found to account for it. If unrelieved, secondary symptoms arise, due to the pelvic congestion, leading in some cases to disease of the ovaries.

The treatment of this form of dysmenorrhea may be divided into two classes: (1) That directed to reducing the amount of pelvic and uterine congestion; this may be subdivided into (*a*) general and (*b*) local. (2) That directed to lessening the amount of the flexion or removing it altogether.

General treatment should be thoroughly tried first, because many may be cured or much relieved in this way. The girl should be kept warm and her general health attended to. Plenty of fresh air should be indulged in, with moderate outdoor exercise. As soon as the period appears the girl must be kept rigidly to bed, and not allowed to get up until the pain has entirely gone. A large poultice should be kept over the abdomen, and for medicine a brisk saline aperient at the commencement, followed by a mild diaphoretic. Sedatives should be avoided as a rule. The stem pessary has had its day; it is unscientific, seldom cures, and may do harm.

There are two other means at our disposal, namely, dilatation by tents or the rapid forcible method, and Simpson's lateral and Sims' posterior division of the cervix. The object of both operations is to enlarge the uterine canal. To keep it open it is necessary to maintain a glass plug in the canal until the wounds have thoroughly healed by granulation, and then to pass a bougie occasionally. The result of this irritation is that the cervix is apt to become hard, and symptoms may arise of as much importance as those the operation was intended to cure. As compared with dilatation these operations have no advantage.

Still another method is Dudley's modification of Sims' operation of backward division. The object aimed at is the straightening of the uterine canal and the healing of the cut surfaces by first intention, so that there will be no hard tissue or possibility of the old bend returning. The most essential part of the operation is the accurate stitching to-

gether of each half of the wound made when the cervix is divided. All the cases in which the author has used this operation have been cured, or have been improved.

Where operation is refused the constant current, after Apostoli's method, will give relief, acting in part at least by reducing the pelvic congestion.—*Medical Chronicle*, March, 1898.

THE SURGERY OF THE PREPUCE AND MEATUS.

B. H. DAGGETT, of Buffalo, N. Y., writes on this topic in the *Medical Record* of May 7, 1898. He suggests a new procedure for circumcision which consists of a modified combination of the dorsal and inferior incisions. The dorsal cut is in the central line, extending from the anfractus to within about one-third of an inch of the preputial border. The line of the proposed incision having been marked, a puncture is made at the distal end with a sharp point of the bistoury, and a loop of ligature is passed through this cut, for the purpose of drawing the prepuce tense and holding these mobile and lax structures in proper place for incision. The probe point of thin, long-bladed scissors is now introduced into the puncture, and the entire cut through all the tissues is made with one movement, so that the incision shall be straight, uniform, and inclusive. The inferior incision is made from the preputial margin directly backward for a little more than one-third of an inch, or sufficient to overlap the dorsal incision. These cuts will sever all the constricting tissues of the foreskin. The lower incision is stitched with a fine needle and ligature, so as to unite only the inner membrane and the integument, thus making a thin finished border for the enlarged preputial opening. The foreskin is then drawn back behind the corona of the glans, and these incisions will be transverse instead of longitudinal. The dorsal opening is united by fine sutures in this transverse position, and the edges of integument only are to be stitched together. The prepuce is to be held in this position by the dressings, which are not to be removed for four days, unless there are surgical indications for interference. The writer directs that the surgeon shall brush over the exposed portion of the dressings with Friar's balsam to prevent absorption, and leave the apex of the glans free; then to pack with absorbent cotton, and apply the T-bandage. If the parts become dry and painful, apply properly medicated vaselin or moist gauze, without disturbing the first dressing. After about four days the healing will be complete or well advanced, when the entire dressing may be removed, freeing the foreskin so that it may be drawn down upon the glans. This operation shortens and widens the prepuce; it sacrifices no tissue; it neither mutilates nor deforms; it reconstructs and creates a cosmetic esthetic covering and protection for the sensitive glans. "The Tysonian brood" is also preserved in both structure and function.

There is no single operative procedure applicable to all of the varying pathological conditions of the prepuce. The surgeon must choose his method with his patient before him. The surgery of the prepuce will test the mechanical skill and judgment of the operator—it is not a trivial matter.

THE MANAGEMENT OF PATIENTS BEFORE AND AFTER LAPAROTOMY.

WIGGIN concludes a paper with this title in *The Lancet* of April 30, 1898, by calling attention to the points which he thinks of importance, and which, as they are considered minor ones, are often overlooked. They are as follows: (1) The importance, whenever practicable, of prolonged preparatory treatment of patients about to undergo an abdominal operation. (2) The importance of the administration of cathartics in the early part of this period, followed by large enemas for the purpose of cleansing the intestinal tract. (3) The importance of keeping a record of the body temperature, respirations, and pulse-rate for several days in advance of the operation, and of making a final examination of the urine. (4) The necessity, in the female, of arranging to have the operation performed a few days after the menstrual period, and the cleansing of the vagina even when it is intended that the operation shall be by the abdominal route only. (5) The administration of a small quantity of peptonized food (one ounce) containing stimulants two hours before giving the anesthetic, for the purpose of lessening the tendency to nausea and vomiting after the recovery of consciousness. (6) The necessity of the anesthetic being given by an experienced physician and in the smallest possible quantity. (7) The necessity of protecting the patient's body properly with clothing and blankets during the operation. (8) The advantage of stimulating the patient before the heart has become much exhausted and of

using intravenous saline injections before the radial pulse has become extinct. (9) The leaving in the abdominal cavity after free irrigation of a quantity of hot saline solution for the purpose of stimulating the patient, preventing (?) the formation of intestinal adhesions, and lessening the danger of septic infection of the peritoneum. (10) The necessity of making the patient comfortable by change of position during the first two days of convalescence and by the use of the rectal tube. (11) The necessity for the early administration of food in reasonable quantities and at proper intervals. (12) The necessity of withholding stimulating enemata after operations in which extensive and firm pelvic adhesions have been broken up. (13) The necessity for deliberation as to the wisdom of reopening the peritoneal cavity in a given case of supposed concealed hemorrhage. (14) The importance of washing out the stomach as soon as the diagnosis of intestinal paresis is made and of the persistent use of saline cathartics till the bowels move. (15) The importance of not administering cathartics too early or in too large doses to those convalescing from abdominal operations and who are pursuing a normal course.

THE PHYSIOLOGICAL EFFECTS OF OVARIAN JUICE.

FERRÉ and BESTION have studied the effect of a glycerin and water extract of ovary and find it to possess distinct physiological influence in males and females, and they find that males cannot stand the dose well borne by females. If a large dose be given to a male he becomes intoxicated and dies, and a female requires double this dose to produce death. The symptoms shown by the male consist in progressive hypothermia, the production of sloughs at the point of injection, excitement of the genital apparatus with erections and ejaculation of semen, and finally tremors and paralysis. Hematuria may develop. They found tubular nephritis, and in the paralyzed animals congestion of the spinal cords, particularly in the area of the spinal center in the lower dorsal and lumbar region. There were also well advanced lesions in the anterior cornua of the spinal cord. Ferré and Bestion conclude that the juice has a distinct effect and that the partial immunity of females to this effect is due to the fact that they are accustomed to the ovarian juice in that doses similar to those which caused death in the male will do so in females below puberty who are not accustomed to ovarian activity. They believe that ovarian gland should be cautiously given to women who have passed the climacteric for these reasons.—*La Médecine Moderne*, May 1, 1898.

THE CAUSES AND TREATMENT OF HABITUAL CONSTIPATION IN INFANCY.

In the *Archives of Pediatrics* for June, 1898, SOUTHWORTH writes upon this subject. He does not hesitate to assert positively that in his experience it is now exceedingly rare to find a child who is artificially fed whose constipation cannot be remedied by intelligent modification of its diet. In beginning the treatment of a case of habitual constipation, it is usually advisable that the intestinal tract should be gently but thoroughly evacuated in order that the obstruction offered by the accumulated or hardened masses may be eliminated. For this purpose he prefers calomel in divided doses. It may be necessary at first to make daily use of mild laxatives, which facilitate the training of the bowel and assure proper evacuations during a gradual increase of certain elements in the previous diet or the addition of new substances, but the laxatives should then be decreased and withdrawn as soon as practicable.

Too often we yield to the temptation to prescribe drugs rather than study out and remedy the essential cause of the constipation. The former give us quicker results and redound more evidently to the credit of our therapeutic acumen, but in resorting solely to their use under such circumstances we are not doing our duty by our patients or by ourselves. The temporary relief or masking of symptoms by therapeusis, when the etiological morbid condition may be permanently removed by more painstaking application to our problem, approaches dubiously near to charlatanism.

Where a mild action only is necessary, the tablets of rhubarb and soda, of each one and a half grains, made up with oil of peppermint, may be dissolved and given once, twice or three times a day, especially in those cases which depend upon disturbed intestinal function. Where this is not sufficient, the fluid extract of cascara proves one of the most reliable of the well-tested laxatives, infants requiring from one to four minims thrice daily. Preparations of malt with cascara have been highly lauded by undoubted authorities. The fluid preparations of malt,

which have already been mentioned in speaking of the malted foods under the head of dietetic resources, should again be mentioned here with the efficient laxatives. Cod-liver oil, which there are good reasons for classing as a food rather than as a medicine, is peculiarly serviceable in those cases dependent upon poor nutrition, in which the addition of a fat is indicated.

In rather older children, where a more decided action is necessary, other drugs may have to be employed in varying combination to meet definite indications. But it is chiefly where the neglected constipation is of long standing, and where from overdistention the muscles of the lower bowel have lost their tone, that we need for any length of time to call therapeutics to the assistance of dietetics.

The longer and more carefully the author studies his cases of constipation in infancy, the less he finds that he needs to resort to the use of laxatives for its cure.

For comparatively short periods enemata may be employed with advantage, but they are capable of abuse. For occasional use they may be large, but when used daily the quantity of fluid should be small, the smallest that will stimulate the bowels to contract. Theoretical considerations lead us to the conclusion that cold injections excite more extended peristaltic contractions, and a saline solution is less irritating to mucosa of the bowel than plain water. Glycerin, a teaspoonful in a tablespoonful of water, is a stimulant, has a hygroscopic action, and is one of the best measures at our command.

For cases which habitually require assistance, suppositories of gluten or glycerin are preferable, as they avoid the loss of tone which comes from frequent distention of the bowel by enemata; but the profession has been warned against the use for children of glycerin suppositories which are medicated. Where medicated suppositories are necessary, they should be made with cacao butter, and the proportions of the ingredients controlled by the physician's prescription.

Much of the constipation of later life may undoubtedly be traced to irregular action of the bowels and the neglect of the formation of proper habits in infancy and childhood; so that when we look beyond the present and consider the ultimate results of intestinal torpor in years to come, the regulation of this function becomes imperative in every case, but we should endeavor to accomplish this by removing the cause through the employment of simple and rational dietetic and hygienic measures, remembering that the abuse of enemata and purgatives, as pointed out by Earle, will eventually diminish the sensibility of the mucous membrane and produce atony of the muscular coats of the intestine.

CHRONIC INTESTINAL INDIGESTION IN CHILDREN.

In a recently read paper DESSAU (*Archives of Pediatrics*, June, 1898) discussed this topic. In connection with it he presented a little boy, ten years old, whom he had seen last January, because of nocturnal incontinence of urine and feces. As the boy had been circumcised in infancy, preputial adhesions could not be blamed for the condition in this instance. The boy had a poor appetite, and was very restless at night. He was put upon proper diet and treated for indigestion, with the result that the trouble for which his mother sought advice quickly disappeared.

Dr. Dessau said that the idea that the more food a child eats the better its health seemed to pervade all classes of society, and with most disastrous results. Infants who regurgitate or vomit food do not seem to have intestinal indigestion, because Nature protects them in this way. If starchy food intended for children is not cooked sufficiently to allow of rupturing the starch granules, the starch will not be digested; instead, acetic acid will be formed, and will irritate the alimentary tract. The offspring of gouty patients are very liable to manifest a neurotic constitution, and in these the liability to intestinal indigestion is much greater than in others. In a limited number of cases the seat of trouble might be localized. In young subjects, owing to certain histological peculiarities, the flow of mucus, as a result of irritation, is much greater than in adults. This profuse mucous secretion, so rich in mucin, furnishes an admirable soil for the development of micro-organisms, and of toxins. The large quantity of altered mucus also furnishes a convenient place for the lodgment of intestinal entozoa. Children who have suffered previously from chronic intestinal indigestion, and afterward become the victims of some acute infectious disease, have their symptoms markedly aggravated. The invasion of the mucous membrane in children by the micro-organisms of the acute infectious diseases seems to result in a tendency to hypersecretion of mucus for a long time afterward. The childish victims of chronic intestinal indigestion sleep badly, are

very restless at night, have deep sighing respiration, and sometimes fainting spells during the day. Thirst, a craving for acids, and a general irritability of temper, are also commonly observed. The tongue is moist and glossy, and the papillæ at the side are unusually distinct. Sometimes there are febrile attacks, associated with vomiting, and the passage of mucous stools. More commonly there is constipation, and the stools are pasty and of a light color. A dry, hacking cough is sometimes present in advanced cases, and as it is associated with loss of flesh and a slight febrile movement, it may lead one to suspect pulmonary tuberculosis; but the rise of temperature is not so marked or so permanent as in the latter disease. This point in the diagnosis can be safely and positively decided by the use of tuberculin [of which we disapprove.—ED.].

The reader of the paper went on to say that infants up to four months should not be given more than four ounces at a feeding, and should not be fed more than once every two hours during the day. When old enough to have a mixed diet, the starchy foods should be cooked not less than one hour in order to insure their proper digestion. With older children, milk should form the usual beverage instead of tea or coffee. Meat should be allowed at only one meal in the day. The drinking of pure water between meals should be encouraged. Where there is imperfect digestion of the starchy foods, taka-diastase may be added with benefit. Coffee and tea are to be condemned; also fats and sugar, except in the smallest amounts. A warm wet pack, followed by a cold douche (60°) to the spinal column, is admirable for promoting oxidation of tissue, and elimination of waste matter. Rectal irrigation at 110° F. with the aid of Kemp's tube is a most efficient means of relieving attacks of abdominal pain. Drugs should be used chiefly to relieve pain and flatulence, and for this purpose calomel and bismuth are especially useful. The author's custom is to give calomel, one-twentieth to one-tenth grain, in tablets, every two or three hours for from three to five days at a time, and repeat after a week or ten days. This usually produces a most happy effect. Where there is excessive flatulence or urticaria, bismuth in some form should be administered in doses of five grains three times daily. After dentition, Dr. Dessau prefers the use of a tonic laxative, such as a mixture of cinchona and nux vomica, with senna or cascara sagrada. To this he adds spigelia, not because it is an excellent anthelmintic, but because in small doses it is a most reliable remedy for correcting that condition of the bowel which is favorable for the breeding of intestinal worms. It arrests the immoderate secretion of mucus and diminishes flatulence. The following formula is recommended:

> Fluid extract of spigelia, 2 drachms;
> Fluid extract of senna, 2 drachms (or cascara, 1 drachm);
> Tincture of nux vomica, 1 drachm;
> Compound tincture of cinchona, ½ ounce;
> Compound syrup of sarsaparilla, ad 2 ounces.
>
> Sig.: One drachm three times a day.

When there is anemia present, and the tongue is not much furred, it is well to alternate the use of spigelia with elixir of the manganate of iron, an elegant and palatable ferruginous preparation. These remedies should be continued, in alternating courses of three weeks, for about three months.

THE SURGICAL TREATMENT OF CATARRHAL EROSION OF THE CERVIX IN THE NULLIPAROUS WOMAN.

MUNDÉ tells us in the *American Journal of Obstetrics* for May, 1898, that the speedy and certain cure of chronic endometritis in the nulliparous woman by the sharp curette, whether followed by cauterization of the endometrium with a solution of chloride of zinc or with iodized phenol or not, is generally admitted. And especially rapid and sure is the recovery when the endometritis occurs as the result of a parturient laceration of the cervix, and the curetting is at once followed by the repair of the cervical lesion.

But there are a certain number of cases of endometritis in the nulliparous woman, and even in the virgin, in which mere curetting and cauterization do not suffice to effect a cure. These are the cases in which the catarrhal inflammation of the endometrium has produced a hypertrophy of the glands and papillæ of the mucous lining of the cervical cavity sufficiently powerful to force apart the lips of the virgin os and even to evert the lips to a degree scarcely, if at all, distinguishable from the eversion produced by an actual parturient laceration of the cervix.

This condition must not be mistaken for a congenital fissure of the cervix, which was first described by Fischl, of Prague, in 1883, and later by Penrose in 1896, or with the congenital erosion of the cervix reported by Lepold and Ahlfeld in 1872. Such a congenital fissure of the cervix with erosion the writer saw in his clinic at the College of

Physicians and Surgeons of New York in the winter of 1881–1882, and mentioned the case in his work on "Minor Surgical Gynecology."

In cases where the lips of the external os are not forced apart by the exuberant glands of the cervical mucosa, the glands and papillæ of the vaginal covering of the cervix become disorganized by the chronic congestion, and the epithelium covering the membrane adjoining the os becomes abraded, so that in well marked cases a large part of the sphere of the cervix presents a bright red, raw, ulcerated appearance. This is the condition described in the older books as "granular and cystic degeneration of the cervix," and is not a disease by itself, but simply the result of an old chronic endometritis.

In the author's experience this condition is exceedingly common. He finds in his office case-book as many as seventeen cases in nulliparous married women during the past year and two in virgins. Of course virgins are much less likely to present themselves for examination than married women; but from his observation in past years he is confident that this condition is not at all uncommon even in young virgins. Indeed, he has seen several cases in virgins where the erosion and eversion of the lips of the os was quite bad.

The author does not treat in this article of endometritis and erosions, or hypertrophy of the cervix accompanied by laceration of the cervix, as these conditions occur in the woman who has borne children. He refers exclusively to a similar lesion in the, obstetrically speaking, virgin uterus.

Mere curetting and cauterization will not suffice to cure a pathological condition such as exists in this complaint. One can scrape away the diseased glands and papillæ with the sharp curette, but there will be left a raw surface surrounding the external os which will heal but slowly under the use of caustics, and in its place a cicatrix will remain, with probable contraction of the os. The author has seen this frequently in cases treated by other physicians, especially in former years when the sticks of nitrate of silver were so commonly used to cure erosions of the cervix. The resulting sterility was the cause of his being consulted. It may take weeks and months for such an erosion to heal firmly, and a recurrence of the erosion is not impossible.

Years ago it occurred to Mundé that the excision of the diseased tissue surrounding the external os, the limit of which is shown by the extent of the erosion on the cervix, and the union of the raw surfaces by suturing, might offer an easy, rapid and certain method of cure. Thus, in a paper on "The Indications for Hystero-trachelorrhaphy, or the Operation for Laceration of the Cervix Uteri," published in the *American Journal of Obstetrics* for January, 1879, there will be found on page 127 the following paragraph: "We are all familiar with the difficulty experienced in curing large granular and follicular erosions of the cervix by caustics. Why not, then, hasten the cure by removing the diseased mucous membrane and uniting the healthy edges by sutures, as is done in Emmet's operation? I am confident much time could thus be saved."

The writer has never specially referred to this suggestion again in print, although he has often practised the method, particularly during the last ten years. But the cases have come under his observation so frequently of late that he has decided to follow the suggestion of Dr. W. H. Luckett, to write up the matter.

The operation is exceedingly simple, and consists merely, after curetting the whole endometrium (the sharp curette in the cervical cavity), in excising with slightly curved sharp scissors or sharp, slender knife the entire diseased tissue to the depth of half an inch in converging directions. The cervical cavity then has the shape of a funnel. The raw surfaces are then united by deep sutures, either silver wire, which he prefers, as it can be allowed to remain as long as desired and assures greater certainty of permanent union, or catgut, which will answer very well in minor cases.

Usually two or three sutures on either side will suffice. As the whole tissue surrounding the external os is excised, it is necessary to prevent the complete closure of the cervical canal and os by passing a thin strip of iodoform gauze through it into the uterine cavity. This is changed every forty-eight hours for a week or ten days, when the patient may be allowed to leave her bed and can be discharged, returning after the next menstrual period to have the sutures removed, if they are wire, or to enable the surgeon to see whether the external os is normal in size and not contracting. It is well to advise such patients to call several times, at intervals of one or two weeks, for the passage of a large (Peaslee's) sound, in order to prevent the contraction which so readily follows plastic operations on the cervix

uteri, especially those performed for congenital stenosis of the os and uterine canal. Even with this after-treatment the operation under anesthesia here described, being safe, short, painless in its after-effects, and, above all, effecting a rapid and sure cure, seems by far preferable to the tedious, uncertain, and quite as expensive routine treatment with curette and caustics.

Of course no cauterization of the endometrium by iodine or any other agent is employed when this plastic operation is performed.

To illustrate the effect of this operation on sterility, the writer mentions that a lady, married a year and sterile, upon whom he operated in this manner last September, wrote him from her home in Texas a month ago that she became pregnant soon after her return home and expected to come to New York to be confined at the usual time.

In the virgin this treatment need not necessarily involve the destruction of the hymen, which has usually been rendered pliant and elastic by the long-persisting catarrhal discharge and permits the introduction of a small Sims speculum, through which the denudation and suturing can be performed without injury to the hymen. But even if that organ were torn the damage would be of small consequence in comparison with the cure of the disease.

TREATMENT OF EARLY ABORTION BY THE GENERAL PRACTITIONER.

This practical topic is discussed by R. R. SMITH in the *American Journal of Obstetrics* for May, 1898. He emphasizes two points: first, the importance of early intervention, and second, the fact that the operation can be done by the physician under any circumstances. His experience embraces about one hundred cases, treated in all sorts of surroundings, often in houses that were dark and filthy, and usually without an assistant. By far the greater part of these were treated by the curette, and especially is this true of the latter half. We should curette and empty the uterus in all cases of early abortion, except those which are progressing rapidly of themselves, in which there is slight hemorrhage and no sepsis, and the fetus and decidua come away *en masse*. These conditions, according to the writer's experience, are the exception and not the rule, for either there is more or less severe hemorrhage, a rise of temperature, and the case is protracted, or the contents of the uterus comes away in fragments. When this takes place it is rare for the uterus to empty itself completely for days or weeks, and the patient is constantly submitted to the danger of sepsis or hemorrhage.

The use of tampons should be restricted to those cases where dilatation is slow, unattended by other complications. Such cases require careful watching, frequent change of tampons, and operation if the procedure is not attended by more rapid progress of the case. Tampons should never be used for hemorrhage, curetting being far more satisfactory. He has given up the use of ergot, it tending to retard rather than hasten dilatation.

As to methods of operation, if one can procure a good assistant it will greatly facilitate matters, but this should never deter one from proceeding should none be procurable. The operation can be done without an anesthetic and without causing pain, the greatest gentleness being imperative. One requires a sharp curette, a uterine sound, a fountain syringe, a dilator, a uterine irrigator or soft or semi-elastic catheter. A small pair of placental forceps may be useful in removing large pieces. The patient should be placed across the bed, the feet resting on the edge or, as is often more convenient, on the knees of the operator. A towel wrung dry from a bichloride solution should be placed under the patient. After washing the buttocks, the vulva and the vagina with soap and water and bichloride 1:2000, the hands and instruments being duly prepared, one reaches the cervix and, if possible, removes with the finger (but never with the finger-nail) any large pieces lodging within reach; the other hand on the abdomen will assist this maneuver. With the fingers one may dilate the cervix if necessary, or if that is impossible one may use a Wylie dilator; then with the curette one should proceed to empty the uterus, proceeding by touch alone and using the greatest care not to injure the uterine walls. The finger of the left hand rests during this process on the cervix and guides the curette.

The whole operation, if done with proper care and thoroughness, may take more than half an hour. After one has gone over the walls carefully the uterus should be irrigated. This can usually be most conveniently done with a soft or semi-elastic catheter. It is usually impossible to procure at such a time sterilized water of sufficient coolness, and it has always been the writer's custom to wash

out with mild bichloride solution, 1:4000. He has never had the least trouble from this, but has always been careful to see that none of the solution was retained in the uterus and vagina. He states that he has never dared to depend on the milder antiseptics. The patient is then put to bed and a sterilized pad applied.

The after-treatment consists of bed-rest and antiseptic douches. There may be a few small clots passed within the first twenty-four hours, but, if the work has been well done, nothing further. Hemorrhage means invariably that all has not been removed; the same may be said of sepsis, except in those cases where the trouble has already gone beyond the uterus. Such cases, however, are or should be rare and do not come within the range of this paper.

DEATHS UNDER ETHER DURING 1897.

During the year 1897 at least fifteen cases of death whilst under the influence of ether were reported in the public press. As this number is greatly in excess of the previous yearly average mortality, we were led to investigate the individual cases. By the courtesy of the several medical attendants we obtained full details of certain cases, and had hoped to be able by sifting the particulars to arrive at some explanation of such a sudden increase in mortality. The several factors of each case, however, proved so various that no trustworthy conclusion could be arrived at. We therefore give the following brief summary of the facts in the hope that they may be useful. The details of ten of the following cases were furnished direct to us; of the remaining five we have no further information than that given at the several coroners' inquests:

Case 1 was of intestinal obstruction, the result of malignant disease. The patient, a man aged fifty-three, was rather collapsed before the administration of the anesthetic, which was given by a Clover's inhaler. He took the anesthetic well, but vomited while manipulation of the intestines was in progress. There was no preliminary retching, and a large amount of vomit entering the trachea, the patient was suffocated. This case emphasizes the necessity of emptying the stomach before operating on collapsed and debilitated subjects.

Case 2 was that of a woman aged thirty-nine, suffering from ruptured tubal gestation, and in a moribund condition.

The details of Cases 3 and 4 will be found respectively in the *Sussex Daily News* of June 7, 1897, and the *South London Mail* of April 16, 1897.

Case 5 died under chloroform, and Case 6 will be found in full in the *British Medical Journal* of January 8, 1898.

Case 7 was that of a female aged twelve. The operation was for the removal of a large suppurating multilocular cyst of the broad ligament weighing about eight pounds. Previous to the operation the patient was in fairly good condition, but had had a more or less elevated temperature for three weeks. The operation lasted thirty minutes, and about five ounces of ether, which was preceded by gas, were used. During the administration the pulse became more and more weak, the pupils kept contracted, and the breathing became somewhat shallow. The patient having been put into bed and hot bottles, etc., applied, the pulse greatly improved, but the pupils remained contracted, dilating only at the moment of death.

Case 8 was reported in the *Echo* of October 8, 1897.

Case 9, a woman aged thirty-nine, was submitted to an operation for the removal of a retained placenta after abortion. The condition previous to operation was very bad, temperature 104° and pulse 120. Ether alone was administered by a Rumboll-Birch gas and ether inhaler, and an anesthesia had been attained and preliminary irrigation performed, when the pulse ceased to be felt and respiration stopped. From two to four drachms of ether were used.

Case 10 was one of abdominal section; six ounces of ether were given through a Clover's inhaler.

Case 11 is reported in the *Western Daily Press* of September 15, 1897.

Case 12 was an operation for relief of strangulated femoral hernia in a man aged thirty-seven. Previous to the operation there was profuse stercoraceous vomiting. Six drachms of ether were administered from a Clover's inhaler. The patient took the anesthetic well at first except for some struggling, but while passing into the stage of complete anesthesia, some vomit was observed to come up into the mouth without straining, and respiration ceased entirely from that moment.

The operation on Case 13, a woman aged sixty, was for removal of the appendages, together with supravaginal hysterectomy. About six ounces of ether were given, pre-

ceded by gas. Previous to administration the patient was in an apparently good condition and the heart's action was good. At first there was a good deal of cyanosis, but after this the patient took the anesthetic well till about half an hour before the close of the operation, when the pulse became feeble and the respiration shallow. At the post-mortem advanced fatty degeneration of the heart was found.

Case 14 was reported in the *Sussex Daily News* of December 14, 1897.

Case 15 was an attempted hysterectomy as a last resource in a case of protracted hemorrhage in a woman of forty-four.—*British Medical Journal*, May 21, 1898.

HYDROGEN PEROXIDE AND SPONTANEOUS COMBUSTION.

LaWall tells us in the *American Journal of Pharmacy* for June, 1898, that the danger of explosion of hydrogen peroxide, when kept in tightly stoppered bottles, has long been recognized as a serious drawback to the purchase of any considerable quantity at one time. The deterioration or decomposition which, in the most favorable instances, takes place to some extent after several weeks' standing in the bottled condition is accompanied by liberation of oxygen, which (if the bottle be tightly stoppered) accumulates until the pressure is great enough to force out the stopper or burst the bottle, the latter circumstance occasionally being attended by considerable damage to objects in the immediate vicinity.

Although a working process was included for the preparation of hydrogen peroxide in the 1890 Pharmacopœia, at the time of its admission, few pharmacists attempt to make it themselves, and its manufacture is confined to a limited number of firms who make it on a very large scale. As transportation is very detrimental to it, and considering the large amount of it that is handled yearly, the small number of explosions reported is to be wondered at. Probably this may be largely accounted for by the fact that it is usually the custom of the manufacturer to replace bottles broken spontaneously, and it has necessarily made him very cautious regarding the condition of the bottles and the acidity and volume of strength of the preparation when it leaves his hands.

Quite recently, however, the writer's attention was attracted to a new property of this article, which property, it is believed, has never been recorded. It was the phenomenon of spontaneous combustion, caused by hydrogen peroxide under certain conditions. The property was investigated further, and experiments verified the conclusion that, under certain favorable conditions, hydrogen peroxide is capable of causing spontaneous combustion. The circumstances attending it were as follows:

The writer and his assistant went botanizing in New Jersey. Neither *Rhus toxicodendron* nor *Rhus venenata* were yet in leaf nor flower, although many of the plants were observed and avoided on general principles. The next day the assistant discovered that his right wrist was affected by rhus poisoning, and a course of treatment was begun, using peroxide of hydrogen, which seemed to act very favorably upon the eruption. A cheese-cloth bandage was wrapped about the wrist and kept saturated with peroxide by pouring on a small quantity occasionally. The treatment was discontinued in the evening and the bandage removed before retiring. On the second day of the treatment a rush of work interfered with the previous practise of keeping the bandage constantly moistened, and after several applications during the earlier part of the morning, the matter was entirely forgotten. Several hours later an odor of burning clothes and severe pain in the wrist directed the patient's attention to the fact that the bandage was smoldering and was already charred black in many places. Before it could be removed it had caused several burns on the wrist, which required weeks to heal and which will show scars for several years.

The experiment was afterward repeated by saturating the same material (cheese-cloth) with peroxide of hydrogen and exposing it to the heat of a drying oven, meanwhile observing the temperature and action of the peroxide. Charring took place in all cases, but in no case was it produced at blood heat, the lowest temperature at which the action was observed being 65° C.

The conditions produced by wrapping a bandage in the manner described may lower the temperature of combustion somewhat, but as no one cared to submit to experiment in that direction, the occurrence is given as it was noted, without verification.

The probable cause of the phenomenon is the presence of a slight amount of free sulphuric acid, which is allowed by the U. S. P. for the purpose of preserving the solution. When the experiment was tried with the

hydrogen peroxide which had previously been neutralized, little or no charring effect was produced on the material used, while a one-per-cent. solution of sulphuric acid produced charring to a greater extent than the peroxide in the first instance.

WHAT IS THE BEST OPERATION FOR "ADENOIDS?"

The diligent reader of rhinological literature can hardly have failed to notice that for the removal of the masses of lymphoid tissue in the naso-pharynx, commonly termed "adenoids," very different operative procedures are advocated. Galvano-cautery, the cold snare, curettement, forceps, each has its supporters. Some operators seldom use an anesthetic, others invariably do. The position of the patient is as various as the operative features, some surgeons preferring the sitting posture, others what might be termed the recumbent semi-prone, and others again to have the vertex dependent, etc.

The use of Gottstein's curette as the main dependence appears to prevail as against the use of cutting forceps, though many operators combine their use. Dependence upon the curette alone appears to be irrational, and in fact has been deceptive in its results by reason of the structure of the lymphoid growths. The lymphoid portions of these are held together and attached to the vault by fibrous and vascular tissue, forming sessile pedicles and septa, a sort of placenta, varying very much in its extent and firmness. Now, when this fibrous tissue prevails and the growth is therefore termed "tough" and fibrous, it is not reasonable to expect that an instrument like Gottstein's forceps, which scrapes rather than cuts the growth, will thoroughly remove it. A small, strong, sharp forefinger-nail, such as is possessed by some surgeons, is eminently superior to Gottstein's instrument, especially in curetting out the narrow recesses on the wall of the space anterior to the Eustachian prominences and at the entrance of the choanæ, yet it is well known that the portions of fibrous pedicle and lymphoid tissue left after its use often lead to a return of the growth. These cannot be thoroughly removed by even a very strong finger-nail, much less by a curette scraping over the surface. Some form of cutting forceps is necessary. Such forceps undoubtedly require more care and skill for their use than the curette, but then, skill, care and deliberation are far more necessary for the proper performance of the operation than is generally supposed.

With many operators "ignorance is bliss;" for, after a hasty operation with the curette, during which the phenomenal hemorrhage encourages them to believe that they have been heroically thorough, they fail to explore the cavity a week or two later, and to discover that close to the choanæ a considerable mass yet blocks the way, and nasal breathing is still obstructed.

Haste in operating is mainly due to the very free hemorrhage and its menace to respiration. Hence, it appears wise to place the patient semi-prone with the head sufficiently dependent, and to proceed quickly, but without haste. This, of course, necessitates complete anesthesia, and sufficiently profound to insure the quietness of the patient, say from five to eight minutes, during which time the finger-nail and curette can be rapidly used, to be followed by the proper cutting forceps guided along the left forefinger, which (surgeon on the right of the patient) hooks forward the soft palate and constantly touches the sharp edge of the vomer.

The only fairly practicable way of telling whether all the vegetations have been removed is by palpation, and this must be carefully done, or otherwise portions will escape detection.

The above observations are in accord with many competent operators, and are believed to be in accordance with those general surgical principles which insure safety and success; whereas the methods pursued by many operators are neither safe nor successful. There appears at present to be too much stress laid upon rapidity of operating and brief anesthesia, and too little upon the difficulties and dangers attendant upon the complete removal of some of these growths.

No matter how complete the operation appears to have been, a careful examination of the naso-pharynx should invariably be made a week or two afterwards.—*The Laryngoscope*, June, 1898.

EXTIRPATION OF THE RECTUM; OR, WHAT RECTUMS SHOULD BE EXTIRPATED?

MATTHEWS, of Louisville, in the *Physician and Surgeon* for June, 1898, writes a paper on this topic. He says to answer the question, When shall we operate? it might be said:

1. When a dangerous degree of hemorrhage exists.

2. To prevent total occlusion of the bowel.
3. To alleviate great and distressing pain.
4. To prevent further extension of the disease and effect a cure.

To the first proposition—when a dangerous degree of hemorrhage exists—the writer would affirm that he has never had occasion to operate on this account; not that he has not seen cases that bled profusely, but in such cases the bleeding could be and was controlled without the radical operation. In many instances great hemorrhage, or indeed a small hemorrhage, seldom occurs. If, then, such a dangerous symptom does exist, and cannot be stopped, a radical operation is justifiable.

Second, to prevent total occlusion. If, upon examination, it is discovered that but a small opening exists, and in consequence a distressing line of symptoms present, it is not necessarily a case for extirpation, but rather to relieve the strictured condition. There are procedures much simpler, and certainly much less dangerous, that will accomplish the desired result.

Third, to prevent great and distressing pain. It would depend entirely upon what caused said pain, and if an operation would relieve it. Pain in malignant growths is often *inherent*, caused by the involvement of nerves in pathological tissue, and if this condition exists to a marked degree it will call for the extirpation of the growth rather than a colostomy. If, as many suppose, pain is caused by the friction excited by the passage of the feces, then a colostomy is preferable to extirpation, all things being equal. But the author believes that the distinguished surgeons will attest that in many cases of cancer of the rectum, especially when the growth does not involve the sphincter muscles, pain is not a factor in the case. Under such a condition one would not be justified in extirpating the rectum.

Fourth, to prevent further extension of the disease, and to effect a cure. This last reason appeals more to the surgeon, the writer admits, than all others combined. If such result can be obtained, a surgeon would be very remiss in his duty if he did not resort to the most radical method even to accomplish so good an end. But can this result be obtained, and when? Several methods have been proposed by which the entire rectum can be removed. So that it is no longer a question when we shall operate in order to effect a cure. In the early stage and when all the involved tissue can be removed? Yes; by all means. But shall we operate after this stage has passed? Just as emphatically the author would answer no. The gynecologist is beginning to stop and count over his recoveries after hysterectomy for cancer. Just what the tables are has not yet been tabulated or reported. How many recoveries from extirpation of the entire rectum for cancer is not definitely settled. We know that a certain percentage die as the result of the operation. Some live one, two, three, or perhaps six years after the operation. But would they not have lived just as long without it? Many do; yet may it not be they lived in greater ease? But did they? Some do not. If for relief of pain only, morphine would have accomplished as much. There can be no doubt that when constitutional symptoms are manifest, when by the infiltrative process neighboring organs and tissues are invaded, extirpation is unjustifiable. The operation, especially by the Kraske method, is both a dangerous and a difficult one. With so little to promise, and so much to go through, is it not better to comfort than endanger the life of your patient?

The treatment of cancer of the rectum by extirpation is not a new one. Lisfrance was the first to recommend it. Others followed, but it soon was abandoned. Since Kraske gave us his plan it has been greatly revived. Would it not have been just as well not to have given it such an impetus?

How Shall We Operate?—For the treatment of cancer of the rectum a number of plans have been advocated:

1. Caustics, including the thermocautery.
2. Colostomy.
3. Curettement.
4. Removal by the Kraske operation.
5. Removal by the circular method.
6. Palliation, and by division of the coincident stricture.

The first is not much practised and is of but feeble utility.

The merits of the second (colostomy) have been argued *pro* and *con* by many authors. The writer prefers to be classed as an anti-colostomist in the majority of cases of cancer of the rectum.

The third method (curettement) is advocated by Tuttle in an able article. The writer fails to see any advantage it may have over extirpation, and it certainly accomplishes less.

The fourth (the removal by the Kraske plan) is received with much more favor in this country than in Europe. It cannot be gainsaid that it is a difficult piece of surgery

and attended with danger. But the principal reason that the writer opposes it is that by a simple method the whole rectum can be extirpated if deemed advisable.

Fifth (the circular method). Any one after doing extirpation of the rectum by both methods must have been struck by the simplicity of this. If any trouble is encountered by removing the coccyx all the room is obtained that is needed. The sacrum in the writer's opinion should be held sacred. H. O. Walker has improved on the Kraske method by suggesting and practising the use of a large Murphy button to attach the upper and lower edges of the severed intestine.

Sixth (palliation). This can be practised by many soothing local applications and by division of the strictured portions. The author would add also that all pain can be made bearable by the use of opium. The writer has been practising a certain plan for the treatment of strictures of the lower gut, which differs materially from that of others. In the last issue of the *New Orleans Medical and Surgical Journal* Professor Ernest La Place, of Philadelphia, discussed his manner of dealing with strictures of the rectum, namely: "The use of the graduated rectal bougies is the most harmful way of tearing the fibers apart, and of removing the stricture. This is done under ether and can be accomplished in a few minutes. In two or three weeks after the dilatation we find that the gut has retained the new caliber by the operation, or should it have a tendency to contract again, the patient is shown how to use a moderate-sized bougie so as to keep the gut patulous." The writer much prefers to forcibly dilate to full extension by a formidable dilator, and not to use any subsequent dilatation at all. His manner is to forcibly break the stricture, to the fullest extent, then plug to prevent hemorrhage. The frequent use of the bougies accomplishes but little, and the friction extended by the same causes additional deposit, especially in syphilitic or benign strictures.

Matthews concludes: (1) That the Kraske operation for the removal of the rectum is not to be advised; (2) that what is known as the high operation for the removal of cancer of the rectum is seldom justifiable; (3) that the opening of the peritoneal cavity in operating for cancer of the rectum is to be deprecated and should not be regarded as a "light affair;" (4) that the circular is to be preferred over the sacral method in the extirpation of cancer of the rectum; (5) that all malignant growths within reach of the finger, and that can be circumscribed, should be extirpated; (6) that where a stricture exists threatening total obstruction, and it is not considered advisable to extirpate the growth, either colostomy should be done or the stricture should be forcibly dilated; (7) that forcible and free dilatation of a stricture often accomplishes as much as a colostomy, and is much to be preferred; (8) that it is questionable whether the entire rectum should ever be extirpated for cancer.

ACUTE GASTRO-ENTERITIS OF CHILDREN.

NICHOLS, of Savannah, Ga., thinks that the treatment of this affection in children consists in the use of a purgative, if the case is seen early—preferably gray powder, rhubarb, or fifty-per-cent. emulsion of castor oil, one drachm every two hours, until eight doses are taken. The purgative is the *sine qua non*. Fast the child for fifteen hours, and then give egg-water brandied, panopeptone with cracked ice, every hour or two. Twice a day the author usually irrigates the colon—that is, night and morning; he uses a large catheter or small rectal tube, using the ball-nozzle syringe (fountain) on account of its bulk of tube and free stream. All are acquainted with the irrigation technique, but gentleness and proper temperature of the water are necessary. Sometimes a gallon is required to insure proper washing. Detach the catheter gently, inch by inch, and withdraw it so as to evacuate all fluid remaining in the pouches. The author uses common salt, one drachm to a quart. The water should not be over 110°, that is extreme; 90° is better for ordinary cases. His experience in cold rectal irrigation is bad, griping and abdominal unrest resulting.

The author has had no experience in stomach-washing; his patients resist all suggestions on that line. After the first day increasing doses of arrowroot with burnt spiced brandy, and the irrigations, coupled with hyoscyamus extract and aconite tincture every two hours, complete the cure in mild cases. Drugs, in the author's hands, have not accomplished the wonders spoken of in books on therapeutics. The bath reduces temperature, and by the mild shock the vasomotor paralysis is removed and the capillary vessels react and dilate. Bathing the face and head with water at 60° promotes still further reaction, and the eye brightens.

In a grave case our common sense and tact is more than taxed.

Feeding with barley water, white of egg and brandy, and a little salt, usually tides us over to the convalescent stage.

This acute gastro-enteritis must sometimes be confounded with acute milk infection, which presents similar symptoms, only in a more rapid and alarming degree; vomiting and purging may lead to fatal termination in twenty-four to thirty-six hours in serious cases. In the treatment the physician should not give a drop of milk, but use the treatment outlined above; wash out the intestine at once, and dissolve tannic acid in the water, one scruple to a quart, as it neutralizes the poison. Sustaining, energetic treatment should be given, with baths, meat broths quite warm, one drachm at a time. On the acidity or alkalinity of the stools Nichols bases his nutrition. Thus, acid, greenish stools call for the proteid elements, animal broth, egg-water, etc.; both must be freshly prepared and given in small quantities. Large, frothy, alkaline stools call for the carbohydrates, flour (three pounds), boiled eight hours, cooled, and after shaving off the gummy outer coating, grating the hard, chalk-like mass to a powder, of which with spiced brandy and hot water a fine pap can be made; arrowroot also answers excellently.

Nichols concludes by telling us to use mother's milk if practicable. If this is impossible then we are to use the best artificial foods without milk. Condensed milk after six months is a "snare and a delusion," and gives no resisting power in disease, for on it children do not grow so strong, muscular, or as rapidly as they should.

SCALDS AND BURNS.

The object of this article being to review the newer contributions to our list of remedies, the well known measures employed for minor burns, and which all surgeons well know, will not be described. Suffice it to say that the application of bicarbonate of sodium mixed with enough water to make a thick paste, lead-water and laudanum, equal parts of white of egg and sweet oil and white lead paint—which causes the pain to cease almost instantly—have best stood the test of time. It must be said, however, that many newer agents are more effective, both for minor and major injuries; these it is our purpose to review.

Picric Acid.—In superficial burns this agent has been found useful by so many observers who have employed it in a large number of cases that the adverse reports recorded are not sufficient to warrant its rejection as one of our most active agents. It not only procures rapid resolution, but its analgesic action is marked in the majority of cases when employed properly. In deep burns, however, it may give rise to toxic symptoms, and it should not be employed, in the case of children especially, Walter Latouche, Berger and Tuffier having reported marked cases of poisoning in the latter.

Picric acid is a product of the action of nitric upon carbolic acid. It occurs in the form of fine yellow scales, which are soluble in water and alcohol. It is extensively used as a dye, giving a brilliant yellow color to objects over which it is applied. Owing to this property it stains the hands of the operator unless these be previously smeared with vaselin. Stains may also be removed from the skin by means of alcohol or soap and boric acid. D'Arcy Power, who employed it extensively, used a solution made by dissolving one and a half drachms of picric acid in three ounces of alcohol, which is then diluted with two pints of distilled water, a saturated solution being thus procured. The clothing over the injured part should be gently removed, and the burnt or scalded portion should be cleaned as thoroughly as possible with a piece of absorbent cotton-wool soaked in the lotion. Blisters should be pricked and the serum should be allowed to escape, care being taken not to destroy the epithelial surfaces. Strips of sterilized gauze are then soaked in the solution of picric acid, and are so applied as to cover the whole of the injured surface. A thin layer of absorbent cotton-wool is put over the gauze, and the dressing is kept in place by a light linen bandage. The moist dressing soon dries and it may be left in place for three or four days. It must then be changed, the gauze being thoroughly moistened with the picric acid solution, for it adheres very closely to the skin. The second dressing is applied in exactly the same manner as the first, and it may be left on for a week.

The great advantages of this method of treatment are: first, that the picric acid seems to deaden the sense of pain; and secondly, that it limits the tendency to suppuration, for it coagulates the albuminous exudations, and healing takes place under a scab consisting of epithelial cells hardened by picric acid. A smooth and

supple cicatrix remains, which is as much superior to the ordinary scar from a burn as our present surgical scar is superior to that obtained by our predecessors, who allowed their wounds to granulate.

According to Miles the advantages of picric acid are: Simplicity, painlessness, asepsis, small amount of discharge, infrequent dressings, astringent action in preventing inflammation, property of promoting the growth of epithelium, rapid separations of sloughs, absence of poisoning symptoms, and economy in dressings. Its use should cease, in his opinion, when inflammation has subsided and granulations have formed.

Thompson, of St. Louis, who used it in fifty cases, states that it is advisable to let the shreds of clothing which have been burned into the skin remain until the second dressing. The cloth having been asepticized by burning, it will do no harm by remaining, while its removal can only be accomplished by stripping away the flesh. The cloth will act as a capillary drain into the skin, and it will promote a permeation of the acid solution into the injured tissue. At a second dressing the thoroughly soaked fibers can be more easily removed. Dressings soaked in a picric acid solution do not adhere as much as other applications.

Picric acid has also been employed advantageously by Thierry, Filleul, Papazoglou, Sila Novitsky, Souter, and others. The author last named simply paints the saturated solution over the burnt surface with a large camel's-hair pencil and leaves the primary dressing, covered with oiled silk and cotton-wool, on for a period of from three days to a week. He says that the solution is used with much success in iron foundries and sugar refineries, a large bowl of it being kept in readiness for emergencies. This procedure could be imitated with advantage on board of war vessels, especially during action.

Aristol presents the advantage of being useful in burns of the second and third degrees. It occurs in crystals of light reddish-brown color, is soluble in water, slightly soluble in alcohol, and freely soluble in ether and fats.

In burns of the second and third degrees it has been found strikingly effective where other remedies have failed. Haas states that the pain is most instantly relieved and that healing is rapid. R. Y. McCoy, to illustrate its value in ulcerative processes occurring as a result of burns, cited the case of an engineer in whom a scald had caused excessive suppuration of legs, knees, and soles. An ointment of aristol changed the appearance in twenty-four hours, and the healing process continued steadily and with unusual rapidity.

It may be used in the form of powder or mixed with oil or vaselin. The surface should be disinfected with a boric acid solution, and after opening the vesicles aristol is applied and the whole is covered with sterilized cotton-wool, gutta-percha paper, and a bandage. The application of aristol powder directly to the wound at the beginning hinders the dressing from soaking up the secretion; when the latter is diminished, however, aristol may be applied either alone or in a ten-per-cent. ointment with olive oil, vaselin, and lanolin.

Walton, of Ghent, has used the following ointment in the treatment of burns:

℞ Aristol, 1 part;
Sterilized olive oil, 2 parts;
Vaselin, 8 parts.
M.

Around the edges of the burns, after the ointment is spread, he dusts the aristol in powder form. In burns of small extent he employs the powder form only. Cleanliness must be thorough whenever the dressing is changed. One of the great advantages of aristol is its freedom from poisonous effects. There is some smarting at first, but it soon passes off.

Cookman states that aristol may be used in all varieties of burns, from a simple erythema of the skin to a complete charring and destruction of the tissues. In the superficial form it is best used as a powder, while in the deeper burns the following ointment is to be preferred: Aristol, 1 part; olive oil, 2 parts; dissolve and add vaselin, 8 parts. He considers the strict asepsis of the wound, however, as the first essential to success. After pricking all the blebs and permitting the serum to exude, the burn should be well irrigated with a weak solution of boric or carbolic acid, and its surroundings scrubbed with soap and water. Then with sterilized absorbent cotton the surface should be gently dried, and the aristol applied, either as a powder or an ointment. If the latter is used the wounded edges are first dusted with the powder, and then sterilized gauze on which the ointment has been thickly spread is applied. The dressing is completed with another layer of gauze, absorbent cotton, and a bandage. After three days this should be removed, the wound and adjacent parts asepticized as

before, and the same dressing reapplied. By careful treatment in this manner very extensive burns will rapidly cicatrize.

Ichthyol is also efficacious in treatment of burns of the first and second degrees. Leistikow found that it allayed the pain at once. Slight superficial burns heal rapidly. In burns of the second degree with the formation of bullæ, even when extensive areas are involved, the remedy also acts favorably. It is used dry, diluted with zinc oxide or bismuth, the powder being spread evenly over the surface; in ointment (ten to thirty per cent.); or as a combination of these two methods. The powder is the most satisfactory form in extensive burns of the first degree, and should be plentifully applied. In extensive burns of the second degree the soft paste is preferable.

The zinc oxide powder may be combined as follows:

℞ Ichthyol, 1 to 2 parts;
Zinc oxide, 20 parts;
Carbonate of magnesia, 10 parts.
M.

While the paste is mixed as follows:

℞ Carbonate of lime, 10 parts;
Zinc oxide, 5 parts;
Oil, 10 parts;
Lime-water, 10 parts;
Ichthyol, 1 to 3 parts.
M.

Europhen contains about twenty-eight per cent. of iodine, which it yields on exposure to moisture. It is similar in action to iodoform, but has the advantage of having a less disagreeable odor. Again, it is less poisonous, does not become aggregated in masses, or "cake," and is much lighter. It is, therefore, a valuable agent in burns. It may be employed in the form of powder; but a dressing consisting of three parts of europhen and seven parts of olive oil is to be preferred. Nolda, who has used it considerably, employs the following:

℞ Europhen, 1 part;
Vaselin,
Lanolin, of each 10 parts.
M.

This he applies two or three times a day to burns limited to rubefaction or vesication. As it only becomes active in the presence of moisture, its beneficial effect in the presence of secreting surfaces is obvious.

Thiol has been found useful for all degrees of burns. According to Bidder, it allays pain very rapidly and arrests cutaneous hyperemia. In this manner it tends to prevent ulceration and scars. Giraudon has found it especially valuable in burns of the second degree, and he also observed that suppuration and cicatrices were avoided even after burns of the third and fourth degrees.

The parts are first washed with a weak antiseptic solution, and the cuticle that may be hanging loose from ruptured blisters is removed, taking care to leave intact those that have not been opened. After dusting the burn with boric acid, the entire surface of the burned region and the skin around it are painted with a solution of equal parts of thiol and pure water. A layer of greased cotton is then laid on the burn, and kept in place with a loose bandage.

Chloral Hydrate.—The antiseptic and sedative properties of chloral hydrate make the application of a 5- to 30-grain-to-the-ounce solution quite useful in superficial burns.

Nitrate of Potassium.—Nitrate of potassium has been found to be useful in all kinds of burns by Poggi, and may be employed to great advantage when the other agents described cannot be had. It acts mainly as a refrigerant by causing notable lowering of the temperature of the liquid used as a solvent.

If a burned hand or foot is plunged into a basin of water in which a few spoonfuls of the nitrate have been placed, the pain ceases rapidly; if the water becomes slightly heated, the pain returns, but it is allayed as soon as a fresh quantity of the salt is added. This bath, which is prolonged from two to three hours, may bring about the final disappearance of the pain and even prevent the production of blisters. The application of the compresses also exercises the same influence. By this means the pain is allayed and cicatrization takes place without delay.

Calcined Magnesia.—M. Vergely obtained favorable results with this salt in burns of the first and second degrees. The affected parts are covered with a thick layer of paste, which is prepared by mixing the calcined magnesia with a certain quantity of water. This paste is allowed to dry on the skin, and when it becomes detached and falls off, it is replaced by a fresh application. Very soon after the paste is applied the pain ceases, and under the protective covering formed by the magnesia the wounds recover without leaving the cutaneous pigmentation which is often observed to follow burns that have been allowed to remain exposed to the air.

Turpentine.—H. L. McInnis states that spirit of turpentine applied to a burn of either the first, second or third degree almost

at once relieves the pain, when the burn heals quickly. After wrapping a thin layer of absorbent cotton over the burn the cotton is saturated with common commercial turpentine and covered with bandages. Being volatile, the turpentine evaporates, and it is therefore necessary to keep the cotton moistened with it. When there are large vesicles these are opened on the second or third day. It is best to keep the spirit off the healthy skin, if possible, to avoid the local irritation. Turpentine is also peculiarly useful when the granulations are sluggish. It is a valuable agent for the treatment of burns aboard ship, where turpentine is always on hand.

White-lead Paint, referred to early in this article, was extensively used by Prof. S. D. Gross in mild and severe cases, and the results obtained were often remarkable. This excellent remedy is likewise always on hand.

General Measures.—Emphasis was laid by Paul Tschmarke, of Magdeburg, upon the great importance of keeping the injured part aseptic; the patient may recover from the shock only to die of blood-poisoning. This is especially to be feared where the side of the face and the chest are extensively burnt. The wound should at once be thoroughly disinfected. He then covers it with subnitrate of bismuth, and then with iodoform gauze, kept in place by light bandages. If the bismuth powder is found to irritate the skin and the raw surface, after it has been applied for a few days, he replaces it by boric ointment. Every change of dressing should be made in a bath, in which the previous substances applied are allowed to soak off.—*The Monthly Cyclopædia of Practical Medicine and Universal Medical Journal*, May, 1898.

OBSERVATIONS ON WHEN TO APPLY HEAT AND COLD IN EYE TREATMENT.

Poole, of Detroit, considers in the *Journal of the American Medical Association* of May 14, 1898, the therapeutic application of these remedial agents, in some of the diseased conditions we see in our daily treatment of the eye. First, he states as a general proposition that cold causes constriction of the capillaries, thereby checking the amount of secretion and exudation, and in this way acts as a sedative, relieving the pain in the beginning of acute inflammatory conditions.

On the other hand, hot applications are more useful in the later stages, bringing about a more healthful condition of the tissues involved, and relieving pain by stimulating absorption of the exudate and dilating the capillaries, not only in this way modifying the engorgement, but conveying to the part the life-giving principle for its proper nourishment, and the rapidity with which absorption takes place is greatly increased by the previous application of moist heat. This fact is frequently made use of when using mydriatics. In some cases of iritis, where owing to synechiæ the drug seems to make very little impression on the pupil, if we bathe the eye for eight or ten minutes with water as hot as the patient can bear, we will find absorption take place rapidly and we will get the desired action of the drug.

While moist applications are preferable, there are some cases where dry heat is more applicable and satisfactory, such as scleritis and iritis, where there is apt to be little or no secretion except of tears by reflex irritation.

We will find cold applications more suitable in the following conditions, viz.:

In conjunctival hyperemia, which consists almost exclusively in congestion of the vessels, with slight papillary engorgement, a very moderate increase in the secretion and with no swelling of the membrane, whether it is of traumatic origin or caused by eye-strain. The application of the cold douche or bathing with cold water for a few minutes will be very effectual in bringing about a healthy condition of the membrane, care being exercised in not using water too cold, or the reaction may be too severe.

In acute purulent conjunctivitis, which, as its name indicates, is characterized by a distinctly purulent discharge, thus differing from catarrhal conjunctivitis; for as De Wecker says, "let a catarrh be never so intense it will not give rise to true blennorrhea or purulence." We need vigorous treatment from the beginning, and as an adjunct to other treatment, to assuage the initial swelling and pain, we use ice-cold applications, either by using bits of muslin dipped in iced water, changing them every minute so that the cold may exercise its beneficial influence, or in some cases, if the eye will bear it, small pieces of ice wrapped in muslin may be held on the eye. We need have no dread of untoward results from prolonged use, as the rule, especially in the early stages of this form of disease, is continuous cold to the degree of toleration. These applications are to be continued day and night, ever being watchful of

the cornea to see that it is not becoming involved, in which case the cold applications must cease and be succeeded by hot applications persistently, at least four times an hour for three or four hours, by which time usually the threatened destruction of the cornea will have been stopped, owing to the improved circulation and nutrition.

In ophthalmia neonatorum, cold applied in the same manner will be found just as useful and grateful to the little patient.

Cold applications are also sometimes useful in cases of phlyctenular conjunctivitis when, owing to the distressing photophobia, we cannot get the patient to open the eyelids for the necessary remedies to be used; we drop a few drops of ice-water on the eye, which penetrates between the lids and aids us in gently opening them.

Sometimes in penetrating traumatisms of the eye where injury has been done to the iris and the lens, causing plastic iritis and traumatic cataract, ice-cold applications are useful for their germicidal action as well as for overcoming inflammatory reaction.

Poole then goes on to mention a few conditions where hot applications are more suitable than cold.

First, in acute catarrhal conjunctivitis, which while it may present somewhat the same symptoms we found in hyperemia, yet we have here a characteristic stringy, tenacious, flocculent, mucous discharge, with possibly some small masses of pus in it, having a tendency to stick the lashes together. At the very beginning of this condition we frequently find lukewarm applications very comforting and useful, but the error must be avoided of keeping up the treatment too steadily, as is sometimes done by the laity, who frequently make use also of such appliances as potato scrapings, bread and milk poultices, raw oysters, tea leaves, rotten apples, and other disgusting substances, causing edema of the lids and conjunctivæ, intensifying the hyperemia, and finally, in some cases, producing ulceration of the cornea. Such conditions are not rarely met with in the clinics of public institutions.

In edematous conjunctivitis, a condition in which the hyperemia is not marked, where there is little pain and not much discharge, but a considerable effusion of serum beneath the conjunctivæ of both the eye and lids causing a very uncomfortable swelling, bathing with lukewarm water will prove beneficial.

In trachoma, at the beginning of the disease, hot water is not usually well borne. As soon, however, as vascularity of the cornea arises with threatened ulceration, hot applications are indicated to stay the progress of destruction and assist in its repair. Hot compresses are ofttimes useful in causing the disappearance of the pannus by the inflammatory reaction which they promote.

In the less severe cases of phlyctenular conjunctivitis, lukewarm water will be very comforting and beneficial, helping to overcome the eruptive exudate.

In all forms of keratitis hot applications are to be used, never cold, except possibly in phlyctenular, when ice-cold water may be made use of for the immediate purpose of overcoming the photophobia, as referred to when speaking of phlyctenular conjunctivitis. This is practically the only time we use cold applications in corneal diseases.

The applicability of heat in diseases of the cornea will be well understood if we remember the anatomical structure of this membrane, it being non-vascular and dependent upon the surrounding tissues for nutriment; it follows that inflammatory or diseased conditions necessarily stop the supply of nourishment and death and destruction of the cornea results, as is evidenced by the ulceration. In order, therefore, to hasten the repair of the tissue it is necessary to overcome this stasis, which is accomplished by applying hot water, or sometimes better by dry heat, by folding a napkin and heating it by the fire or with a hot iron.

Phlyctenular keratitis is undoubtedly the form which furnishes the majority of cases of corneal disease, occurring as it does among children who are delicate, ill fed, overfed or scrofulous; and in this class of cases we also see the disastrous results of ignorant interference in treatment by poulticing with the several harmful and repugnant articles mentioned previously, instead of using the simpler and more beneficial hot water compress.

On account of its stimulating properties, the hot compress will be found especially useful in the treatment of ulcers that do not heal readily, hastening the process of repair, while a drop or two of scalding water applied to a fungoid ulcer gives good results.

In suppurative choroiditis we find that hot applications are not appreciated by the patient, but they are very beneficial, especially in mild cases.

Hot applications are often very grateful in muscular asthenopia, allaying the pain, and by stimulating the weaker muscle, removing the troublesome symptoms.

In a general way we may say the rule in all the moderate cases is intermittent use of the local applications of both heat and cold, from ten to thirty minutes at a time, and from three to ten times in the twenty-four hours, the continuous use of the applications being indicated only in the severe forms or in special cases.

THE ABUSE OF IODOFORM.

We learn from the *Annals of Surgery* for May, 1898, that Dr. W. G. PORTER recently read a paper in which he sketched the history of the introduction of iodoform into surgical use, and gave extracts from the writings of Mosetig-Moorhof, Moleschott, Miller, Burkhardt, Stillé and Maisch, Le Dentu, Hayes, and others. He called attention to the possibility of toxic effects from its too free use, quoting especially Treves and R. W. Taylor upon that point. As to the manner in which iodoform acts favorably as an application to wounds and granulating surfaces, he gave the views expressed in Hare's work on therapeutics. After this review of the subject he earnestly protested against its routine use to the exclusion of other dressings equally as good and free from its many objections. He said that the general practitioner seemed to think that the only treatment for every furuncle, carbuncle, swelling, ulcer, incision, or wound, was to cover it with iodoform until their patients went around like a walking pestilence, the objects of loathing and disgust to their friends and themselves, and of just opprobrium to their physicians. In hospitals there might be some excuse for its free and practically unlimited use. But in private houses, and particularly in private patients who were going about attending to the affairs of life, there could certainly be no excuse for its use, unless in the rare and altogether exceptional cases in which nothing could possibly take its place. He asked what right any physician had by his treatment to direct the attention of every one to his patient. And yet to-day how few patients who are afflicted with chancroids, herpes, chancre, or almost any other mucous or cutaneous lesion, are spared the infliction of iodoform!

The author gave two examples by way of illustration that had recently come to his attention. The first was a man with a syphilitic ulceration of his face, who had been subjected to the iodoform treatment for a period of four months, absolutely without relief, the ulcer constantly spreading under the caked and incrusted mass of iodoform. He was the proprietor of a prosperous restaurant in a business part of the city, but the combined odors of the iodoform and the badly treated ulcer drove his customers away, and in less than a year he was bankrupt. The removal of the iodoform and the accumulated filth with proper local and constitutional treatment cured him in three weeks—but his customers had gone never to return. The second case was a man who had been operated on for appendicitis. A fistula resulted — not fecal, but discharging freely a non-odorous albuminous fluid, the only treatment prescribed for which was packing lightly with iodoform gauze. He had his living to make, was able to go about and attend to his business after a long and expensive illness, and yet he was constantly handicapped by the dreadful odor of iodoform, from which he could never escape. The removal of the iodoform gauze and the more thorough drainage by a lead wire healed the fistula in a few weeks.

Dr. Thomas G. Morton said that he did not think the use of iodoform was increasing, but that, on the contrary, it was decreasing. In his ward at the Pennsylvania Hospital there was no patient at present upon whom it was being used. Occasionally, however, iodoform gauze is used as a packing or drain in or about foul cavities. Acetanilid gauze has largely superseded iodoform. A number of druggists who do a large business had told him that the call for iodoform had lessened enormously.

Dr. De Forest Willard said that he used iodoform very little. He would much rather smell fecal pus from the ischio-rectal fossa than iodoform. Thymol diiodide is cheaper and better for fresh wounds. Thymol and acetanilid are sufficient for nearly all cases. He uses iodoform gauze in foul pus cases, but in all clean wounds preferred thoroughly dry sterilized gauze. By using thymol diiodide one is not obliged to pay for the trade name, aristol.

Dr. R. H. Harte agreed that public feeling was opposed to the odor, but he did not think it half as objectionable as many of the perfumes so noticeable on the women who go to the theater. Like every good thing it has been abused, but still it is a valuable drug. All recognize the virtues of mercurial salts, but these also have been abused. He thought iodoform was used nearly as much to-day as ten years ago; certainly during his

half of the term at the Pennsylvania Hospital it was used as much as it ever was. At the Episcopal Hospital it was also used very extensively in the wards by his colleagues. As to the poisonous effects, he had never seen any bad results in his own practise, but he had seen bad effects from it where it was used as a primary dressing in extensive burns. He remembered a series of these cases that were treated by iodoform, and almost without exception poisonous symptoms followed. It was a very valuable therapeutical aid. In tuberculous joints iodoform in glycerin is of great use. It is also very valuable in bone disease. His method of using it in cases where he had removed a large amount of bone was to clean out the cavity thoroughly, wash well with iodoform and glycerin, and pack with iodoform gauze. He thought the results obtained in dealing with bone disease in this way were unquestionably much more satisfactory than with the old methods with carbolized oil. Although iodoform was greatly abused, he considered it a most valuable topical therapeutic agent.

Dr. H. R. Wharton said he did not remember ever having seen a case of iodoform poisoning. As regards poisoning, the conditions where it would be most favorable for its development would be in the modern method of using iodoform emulsion injections. He knew cases where it had been used for a number of weeks for tuberculous joints, but he had seen symptoms of poisoning. He did not use it as much as he formerly did, but he believed it to be a very good remedy in certain cases, as in bone cavities and especially in cases of abscess about the rectum, where no packing could take its place. Used in the same way in operations about the mouth iodoform packing remains sweet longer than any other packing. Experience shows that its use is less safe at the extremes of life.

Dr. George Erety Shoemaker said that he had been unable to find anything which would take the place of iodoform in securing cleanliness in a moist cavity. He had had gauze impregnated with aristol, acetanilid, and other materials, but had found that iodoform gauze would remain sweet twice as many days in a moist cavity as would any other preparation. He thought, therefore, that nothing could take its place when, for example, one is obliged to use a gauze drain after abdominal section for serious types of pelvic abscess or in some cases of appendicitis, or in packing the uterine cavity. The remarkable duration of the influence of iodoform in keeping a drain sweet was recently illustrated accidentally. He had done a vaginal hysterectomy for pyosalpinx and metritis, and had put in three strips of iodoform gauze for drainage. In removing these one piece, about three yards in length, was left behind, and remained in the abdominal cavity for one month with an end protruding into the vagina. During this time it was thought that the correct number of pieces had been withdrawn. The patient made a nice recovery from operation, and at the end of three weeks was up and about the ward, with a normal temperature. The other piece was found at a routine examination and gave no trouble. On withdrawal it was still yellow in places and did not smell offensive. To his mind there was no other substance which would have kept it sweet under such circumstances.

Dr. W. Joseph Hearn said that the rational use of iodoform was as much indicated today as it ever was. Some people use it for syphilis, but it is perfectly useless. It is useful in chancroids, and nothing can take its place. Its use to the public mind has not the same significance now that it formerly had. People used to think it meant venereal disease whenever it was smelled. When he had an operation in which there was pus and he had to drain he used iodoform; where there was no pus he did not need anything. He rarely used the powder in any surgical work, but the iodoform gauze whenever indicated.

Dr. G. G. Davis said there were two classes of cases in which powders are used antiseptically, one in which the drying element was desired and the other in which antisepsis was to be obtained. In the latter case he did not think there was anything to be compared to iodoform. He had tried various substitutes, but they had not compared in efficacy to iodoform. In the other class of cases he thought it was almost immaterial which of the various powders was used. Iodoform is the most reliable agent we have to stop suppuration when actual contact can be secured. It is the most permanent of all the available drugs, and its action does not cease within a short time of its application; neither is it readily dissolved. The gauze impregnated with it retains its action for a long time, and it is for that reason preferable in many cases to a plain packing. Plain gauze becomes impregnated within a day and contains no material for the prevention of the

putrefactive process. Iodoform gauze seems to stop the secretion and prevent further putrefaction. He had tried one after another of the various remedies, and the only one he really felt that he could rely upon was iodoform. For comfort and drying of wounds and absorptive procedures almost any one of the powders can be used with similar results, but not for antisepsis. As regards poisoning, he had seen two or three cases in old people in which there was a certain amount of constitutional disturbance, and in which the iodoform had been used in connection with operative procedures. In those cases one could not determine exactly the relative responsibility of the operative procedures and the iodoform, but subsequently the patients developed delirium or mental disturbance, which he believed was due to the iodoform. Although those which he had seen had not been of an extremely advanced and serious type, still the mental disturbance in those of advanced age had been so marked as to cause him to be very careful with them.

Dr. Thomas S. K. Morton stated that his present employment of iodoform was limited to its use as a gauze for packing and drainage, especially where dryness and antisepsis were required for prolonged periods; as an injection in emulsion with glycerin for tubercular joints or abscesses; and, occasionally, in the shape of a five-grain suppository in tubercular affections of the rectum. He could not remember having used the substance as a dusting powder for several years. He had seen violent inflammations and vesicular eruptions following its use upon the skin, especially when compressed against the cuticle under a splint in children. He had frequently observed more or less serious constitutional effects from a copious use of the powder in former times, and was ever mindful of the unpleasant possibilities even of iodoform gauze packing. For the latter he has never been able to find a satisfactory substitute, but was inclined to think that iodoform gauze as commonly used was entirely too strong. Dr. Morton for two years has had his gauze prepared of five-per-cent. strength in bandages of various widths and five yards long. These are steamed at 230° F. for half an hour, by which time about from one to two per cent. of the iodoform has been vaporized. Hence his gauze, when introduced into a wound, is not stronger than three or four per cent. of its weight. From this weak gauze he had noticed slight congestive symptoms with rise of temperature, and mild delirium a few times when large quantities had been inserted. The strips were never lost in wounds, because only one continuous piece of bandage was usually put in. Where dusting powders are required, he has come to rely largely upon bolted acetanilid and compound stearate of zinc, or acetanilid and boric acid. Acetanilid as a gauze has been a failure because of rapid absorption of the drug by the tissues. For chancroids he employs a powerful spray of peroxide of hydrogen, and supplies the patient with a half-ounce of acetanilid with instructions to wash with soap and water twice daily, and afterwards heap as much of the powder upon the sore as it is possible to retain. Then the prepuce is drawn over without dressing. This will cure nine-tenths of all chancroids in a few days. The other tenth will require nitric acid or other destructive agent in addition.

Dr. J. Ewing Mears said that possibly he had given iodoform as thorough a test as any one in its use in the cavity of the mouth. He has used it for many years in wounds of the mouth and in suppurating cavities in a five-per-cent. strength. Never had he seen a well-defined case of iodoform poisoning, but in one or two cases he had seen some effect manifested in the urine by its absorption, but no delirium, or any well defined symptoms. It may appear very strange, but patients do not complain generally of its use in the mouth. They may complain slightly of it at first. The first dressing which he makes is three days after the operation, and then again in two days, but in cases of copious discharge every day. He had had complaints in private practise, and remembered one case who went away, but finally came back, and he tried it again. It was a case of syphilitic ulcer, and he did not care about letting all his friends know of his condition. He had occasionally used aristol, but by preference he employed iodoform. He had seen nothing in his practise which would compel him to give it up.

ULTIMATE RESULTS OF CASTRATION AS A MEANS OF RELIEF FOR OBSTRUCTIVE HYPERTROPHY OF THE PROSTATE.

In June, 1896, the writer published in the *Annals of Surgery* the results of the cases which had been under his personal care in which removal of the testicles or section of the vasa deferentia had been resorted to for

the relief of obstructive hypertrophy of the prostate. He was then able to report eight cases of castration, and three of vasectomy. The amount of relief to the obstructive symptoms which had followed in these cases was very notable, and seemed to justify the conclusion that in these procedures surgery had gained a most valuable resource in dealing with conditions that were not only harassing, painful, and dangerous, but often intractable to any available practicable means of treatment before supported. In the eighteen months that have since elapsed there have been two additional cases in which he has resorted to castration; these he desires now to add to the record:

One case, aged seventy-two years, four months before had been subjected to suprapubic cystotomy and double vasectomy on account of complete prostatic obstruction, not relievable by catheter. At the end of two weeks he found himself able to urinate *per urethram*, after which the suprapubic wound rapidly closed, and by the sixth week was soundly healed, and normal urination seemed restored. This improvement, however, proved to be transient, and marked obstructive symptoms becoming gradually more troublesome again developed, requiring the frequent use of a catheter, which was difficult and painful, until August 12, 1896, when he was subjected to castration. Smooth recovery from the operation followed, with rapid amelioration of his obstructive symptoms, until by the end of four months thereafter he was performing his urinary functions normally, and his general health and strength had become quite restored.

The second case was that of a robust old man, a laborer, aged seventy-five years, who had always enjoyed good health, with the exception of late years of some increase in frequency of urination. Suddenly complete retention developed, which after ten days of systematic catheterization and rest in bed still persisted. The passage of a suitable catheter was not difficult, but the retention remained complete, and rectal examination showed considerable enlargement of the prostate, the right lobe being the larger. The degree of intelligence and the social state of the man were such as to preclude the idea of teaching him to use a catheter in a cleanly way, and any attempt in that line, it was believed, would have been the beginning of infective cystitis. He readily acceded, however, to the suggestion to have the testes removed. This was accordingly done November 8, 1897. Uncomplicated healing without any mental disturbance followed the operation. No change in his condition of urinary obstruction was noted until the twelfth day thereafter, when he twice during the day voluntarily voided a little urine, but from fifteen to eighteen ounces of residual urine still persisted. This was still his condition one month after operation, but from this time a gradually increasing freedom in voluntary urination was noted, until December 23, six weeks after the castration, he was urinating with apparently normal freedom, and the introduction of a catheter immediately after urination showed that there were but two ounces of residual urine.

The favorable immediate results obtained in these two cases, now first reported, are similar to those experienced in the preceding eight, and are like those met with in a very large number of cases which have been reported by others.

There has been no mortality, or even suggestion of danger of such an event connected with the operation in these cases, although Cabot, writing in 1896 (*Annals of Surgery*, June, 1896), found a mortality of 19.4 per cent. to have attended the cases collected by him from various sources (203 cases, 39 deaths). But, obviously, it is one thing that death followed an operation, and quite another thing that death was due to the operation!

It would, perhaps, be a more just interpretation of the facts to say that in a considerable proportion of the reported cases—about twenty per cent.—the conditions preceding the operation had been such as to entail a speedy fatal result notwithstanding the operation, not denying the fact that probably in some instances the inevitable end had been accelerated by it, for the remark is also a just one that a serious pathological condition, in the course of which a surgical operation is done, is prone to be aggravated by such operation, if by it the condition is not at once greatly relieved. Castration done on a patient moribund with uremia; castration done on a patient profoundly prostrated by sepsis from a suppurating prostate or kidney, or necrotic bladder; castration done on a patient with overdistended bladder with pressure effects upon the kidney; castration done on a patient worn out with the suffering caused by the presence of a calculus in the bladder, will, if unaccompanied by the measures required for the immediate relief of the urgent

conditions, be productive only of harm. It is quite evident that castration should not be resorted to in such cases as these mentioned, until after the pressing emergency has been relieved by the use of appropriate measures and a favorable state has been created for the introduction of a procedure which may gradually, and possibly only after the lapse of weeks, induce a subsidence of the prostatic obstruction. The value of such a course is strikingly illustrated in two cases of his series, in each of which by suprapubic cystotomy free bladder drainage was provided for and maintained for some weeks before resort was had to castration.

Of more importance is the possible effect upon the mind and disposition of the man produced by withdrawing from him the special stimulus furnished to the economy by the glandular products of the testes.

Acute mania, dementia, and gradual loss of vigor, causing the patient after a time to succumb to conditions which before the removal of the testes had been well borne, are the states which have been more especially ranked as fairly frequent sequelæ to the operation. The later history of castrated prostatics is therefore of special interest from this point of view. In the previous report the author gave the details of one case in which a distinct tendency to dementia developed immediately after the operation in a man seventy-two years of age, with an atonied overdilated bladder, dribbling at thirty-seven ounces. At the end of three months, however, by which time the function of urination was being normally performed, his mental condition had greatly improved. His later condition is unknown to the author.

One man, sixty-eight years of age, died of dysentery some months after castration.

One man (the second case reported in this paper) is of too recent date, as an *operé*, to have any late history. The remaining seven cases the writer has been able to follow, and their condition to day, in brief, is as follows:

Case I.—Time since castration, three years; present age, seventy-seven; hale, hearty, and active physically and mentally. Still has five ounces of residual urine, which he evacuates with catheter night and morning. Urinates spontaneously every two or three hours.

Case II.—Time since castration, two and a half years; present age, fifty-eight; a clergyman in charge of an important church; states that his physical vigor and his mental grasp have notably improved since operation. His originally long overdistended bladder, dribbling with sixty-four ounces, still halts with ten ounces of residual urine, requiring catheter for its removal.

Case V.—Another clergyman. Time since castration, two and a quarter years; present age, fifty-four years; still continues to preach with acceptability and to administer the affairs of his parish with prudence. Still has some residual urine and a chronic cystitis, which requires the use of a catheter and daily irrigation of the bladder to keep under control. Reports that urination is now attended with more difficulty and pain than it was during the first year after the removal of the testes.

Case VI.—Time since castration, two years; present age, sixty-seven years; general health excellent; mental grasp undiminished; still attends actively to the affairs of an important business. His chief annoyance has been the frequent occurrence of uncomfortable flushes of heat similar to those experienced by women at the time of the menopause.

Case VII.—Time since castration, one and three-quarters years; present age, sixty-four years; in good health, sound mind, and free from all urinary disturbance.

Case VIII.—Time since castration, one and three-quarters years; present age, seventy-two years; in good health, sound mind, and free from urinary disturbance.

Case IX.—Time since castration, one and a half years; present age, seventy-four years; is hearty and vigorous; devoted to equestrian exercise; manages with skill a spirited horse.

This completes the record of the writer's personal experience to January 1, 1898. Certainly in these cases the relief from the special sufferings and difficulties incident to obstructive prostatic hypertrophy has been great; in some of the cases it has been complete, the freedom of urination having been restored to the normal point; in others, some obstruction persists, even after the lapse of some years, requiring catheter-help at times, but in a degree very much less than before castration.

This relief has been secured by a procedure that has been free from pain and has been attended with but little, if any, risk to life; the worst blur upon the record is the infliction of a few weeks of childishness upon one patient. The procedure is one that demands no special surgical experience, nor elaborate ménage, nor peculiar or costly instruments for its proper performance. It seems to the writer that it has at least won a

place for serious consideration whenever the problem of the relief of urinary obstruction due to prostatic hypertrophy is presented for discussion.—LEWIS S. PILCHER, in the *Annals of Surgery*, May, 1898.

A SIMPLE METHOD FOR CONTROLLING HEMORRHAGE DURING DISARTICULATION OF THE HIP.

LYNN THOMAS, in *The Lancet* of April 23, 1898, says that in emergencies the ideal method for controlling hemorrhage in amputation is undoubtedly that which requires no special instruments in one's operating-bag. Perhaps the majority of the younger surgeons do not realize that the loss of blood is quite insignificant in disarticulation of the hip by the anterior incision because the femoral artery and vein are ligated at the outset of the operation (Treves). The author thinks the amount of blood lost is less than the quantity of blood driven into the body by vertical elevation of the limb for a couple of minutes prior to the operation. In a properly equipped operating-room, surrounded by competent assistants, the surgeon can adopt either a simple or complicated method of arresting the hemorrhage with equal comfort and confidence of success; but in a badly lighted room with incompetent or inefficient assistance in a private house amputation at the hip becomes a very serious and anxious undertaking unless one happens to possess two one-foot skewers and at least two yards of india-rubber tubing in the operating-bag (Wyeth's). In Swain's "Surgical Emergencies" (fifth edition) Davy's lever and Jordan Lloyd's methods are the only two referred to in connection with the arrest of hemorrhage in disarticulation of the hip. The first method is practically obsolete, though extremely ingenious, and very few men are *au fait* with the other method.

During the last twelve months the author has had to disarticulate at the hip on three occasions, once at the infirmary and twice in private practise: (1) For sarcoma of the femur; (2) for osteomyelitis of the femur; and (3) for an injury. On one occasion he used with satisfaction the following method: The common femoral artery and vein were temporarily compressed immediately below Poupart's ligament. At this point the artery is quite superficial and easily felt and is well above the origin of the deep femoral artery. The femoral pulse being felt, he made two stab punctures in the skin, one about an inch outside the pulse and the other about two inches to its inner side—*i.e.*, immediately below the pubic spine. An aneurism needle with two eyes (Horsley's pattern), which he always carries in his bag, was pushed from one stab puncture well behind the artery and vein to the other stab puncture, and two long, thick silk sutures were carried through in withdrawing the needle; then a pad of Gamgee tissue was rolled up and placed over the artery between the punctures, the two silks were tied separately over the Gamgee tissue, and thus the vessels were efficiently and satisfactorily occluded during the operation. It is advisable to simply tie the first stage only of the surgeon's knot and clamp it with the forceps, and by this means we can easily retie if necessary when letting go after ligating the visible blood-vessels on the face of the stump. The only condition which might embarrass one in adopting this method of controlling hemorrhage in amputation at the hip would be the occurrence of an irreducible femoral hernia. There is a method of controlling the same vessels by means of a large Doyen's broad ligament forceps; only one puncture is made on the outside of the femoral pulse, and one blade is forced through behind the vessels and then the forceps is clamped. This method would be quicker and would take only a few seconds to apply, but it means the acquisition of a special instrument which is not in every operating-bag, whilst the first method requires nothing beyond the essentials of every operating-bag.

The author is not aware that the principle of underrunning the vessels with silk and tying it over them has been applied to the common femoral vessels before, whilst it is a recognized method of treating cirsoid aneurism of the scalp. It is hardly necessary to add that after placing the ligatures and pad (in the method he once adopted successfully) it is necessary to elevate the limb to drain it of its blood before tying the knot tightly. If one were amputating at the shoulder-joint single-handed the same method would be found very useful.

THE SURGERY OF THE KIDNEY.

HENRY MORRIS in an important article on this topic in *The Lancet* of April 23, 1898, thus summarizes his views:

1. That the aim of the surgical treatment of renal calculus should be to extend the application of nephrolithotomy and thereby restrict the necessity of nephrotomy and nephrectomy.

2. That more frequently than not the failure to find a stone is not in reality a failure of treatment, because there are so many curable morbid conditions which mimic renal calculus and which are discoverable only by exploration.

3. That the theory that a stone in one kidney, whether that kidney is itself painful or not, reflects or transmits pain to the opposite kidney is quite unproven; that it is a dangerous theory, calculated to lead to very erroneous practise, and that the surgical principle with regard to exploratory operations should be that with pain, paroxysmal or continuous, on one side only, the kidney on the painful side should be explored.

4. That nephrectomy for calculous conditions is very rarely called for and should be done only in most exceptional cases. Nephrotomy for calculous pyonephrosis is the proper operation, because of the frequency of double calculous disease. Experience has shown that kidneys from which stones weighing 830 grains and 1300 grains have been removed are functionally sufficient to maintain life during the blocking of the ureter and the suspension of the function of the kidney of the opposite side.

5. That nephrectomy whilst the opposite organ is occupied by calculus is fraught with very great danger to life; whereas nephrectomy after the opposite kidney has been freed from stone will probably be followed by recovery from the operation and possibly by very good health for years afterward.

6. That when renal calculus causes reflected or transferred vesical or ovarian pain, the removal of the calculus will be followed by complete cure of the bladder or ovarian symptoms.

7. That in some cases renal calculous conditions are attended by very remarkable nervous symptoms, sometimes with, sometimes without, high temperature, and that information as to the cause of these symptoms is needed.

8. That unsuspected renal calculi are a source of very real danger to their possessors, and when, whether by accident or by the systematic examination of the urine, we have cause to suspect the presence of a calculus we should recommend its immediate removal regardless of the fact that it is not causing renal or transferred pain.

9. That quiescent calculus is as dangerous to the individual as unsuspected calculus and ought to be removed by operation.

10. That the hitherto accepted teaching that a renal calculus, if causing only mild symptoms or attacks of renal colic of only recent occurrence, should be treated on the expectant plan ought to be discarded as unsound in theory and dangerous in practise.

11. That the same principle should be applied to renal calculus which has long been the rule in regard to vesical calculus—namely, when suspected it should be searched for, and when known to exist, removed, without waiting in the hope that it may become encysted or spontaneously expelled.

12. That the very low mortality of nephrolithotomy puts this operation upon the same footing for renal calculus as lithotrity in the most experienced hands for vesical calculus.

CLINICAL REMARKS ON STRICTURE OF THE URETHRA.

HARRISON in *The Lancet* of April 23, 1898, writes on urethral stricture and thinks that the following classification of strictures is one which may be conveniently used for clinical purposes: First, those amenable to some form of dilatation; second, those found to be unadapted for such treatment and where other measures should be considered; and third, those which may have been regarded as impassable strictures. The author limits his remarks to questions arising under these three headings.

The first class includes by far the greatest number and all strictures in their early stages. When this process of treatment proceeds satisfactorily, as it usually does, the patient is soon able to take the management of his own case after he has been instructed in the use of the appropriate instrument. For whatever is done in the way of treatment by dilatation or otherwise, in the majority of advanced forms of urethral obstruction the patient can seldom hope to entirely dispense with the passing of a bougie. When a person who is suffering from symptoms which may indicate stricture presents himself for the first time, much care is required in exploring his urethra with a catheter or bougie. It is very easy to spoil a stricture and so lose the way through it. Thus future access to the bladder may be rendered rather more than less difficult. On making an examination of this kind the aim should be to ascertain, without causing pain or bleeding, if possible: (1) the presence and position of the obstruction, and (2) the degree of contraction that has been arrived at. It is undesirable to endeavor to pass an instrument into

the bladder without knowing all this beforehand, otherwise we may easily select one too large for the purpose and so in the first attempt do more harm than good. The thinnest end of the wedge must first be inserted, and then the dimensions of the contraction can be readily and accurately gauged.

In view of giving effect to these points the author described fifteen years ago a flexible conical bougie or dilator which, so far as his experience of it goes, has superseded most instruments of this kind and has been the means of considerably reducing the number of what are called impassable strictures. These instruments are used both for locating and measuring all kinds and degrees of urethral stricture. They are about twenty inches long, commencing with a fine probe-ended extremity, which gradually expands in the opposite direction. They are made in different sizes and are rendered extremely flexible when placed in warm water for a few minutes, if necessary, before using them. In this way they will readily coil up within the bladder. He much prefers the French make (Lassére's); he finds them useful, not only for the purpose he has mentioned, but for smoothing out a rough urethra and making the access to a stricture funnel-shaped, so that it may be easily entered by almost any other instrument. The late Mr. Lund, of Manchester, christened them "whips" when the author first showed them and he adopted them, and they have since always gone by this name. Bangs' filiform bougies, made on the same principle of the finest whalebone, are applicable to even more contracted forms of obstruction, such, for instance, as the eccentric pin-hole strictures which are occasionally met with. They may also often be used with advantage as pilots for the "whips." The author can strongly recommend both of these instruments to practitioners who are liable to meet with stricture cases and have not hitherto given them a trial. Either of them will do duty in an emergency in relieving a retention of urine in the absence of a catheter by at once dilating the stricture to almost any extent by a single introduction of the instrument. On its withdrawal the patient is usually able to empty his bladder immediately by his own efforts. He has frequently used them in this way with prompt relief. He thinks they should be more generally known. No force can be exercised by them, otherwise they will double up and the object is defeated.

Passing to the second class of cases, which includes strictures found on trial to be unadapted for any form of dilatation when for any reason a large amount of scar tissue has been imported into a stricture—as, for instance, in obstructions following wounds and injuries of the urethra—it may be found impossible to sufficiently dilate the contraction which follows. This may proceed from some difficulty in connection with the access or entrance to the stricture, as when damage has been done to the interior of the urethra, from the inherent contractility of the tissue composing the obstruction, or from certain constitutional disturbances following attempts at dilatation even of the gentlest and most gradual kind.

In instances such as these and the like immediate and permanent good to the stricture may be done which will not yield to dilatation alone, and thus prevent the bad effects of back pressure gradually extending to the bladder and kidneys above, by introducing a splice of new material into the contracted portion of the canal, much on the same principle as we should expand a tight garment. For these purposes the author usually selects Maisonneuve's instrument. It consists of a fine pilot and director upon which runs a small triangular knife dulled at the apex. It can thus only divide the contracted portion or portions of the canal, and this it does by a clean linear longitudinal incision corresponding in depth with the size of the blade. As healing takes place, under the use of a bougie a splice or interval of new tissue is introduced between the lips of the incision, and thus the caliber of the canal may be considerably increased in a short time. For forty-eight hours or so before this is done it is well to sterilize the urine with some boric acid taken by the mouth in small doses, or with what he has found still better, boracite. The former sometimes produces indigestion, whilst the latter is both pleasant and reliable. The filiform pilot is then passed through the stricture into the bladder, the fine metal director following it. The urethrotome is next run along the groove into the latter, and the stricture or strictures are divided from before backwards. Care should be taken not to run the blade further than the last point of contraction, so as to avoid touching any fibers of the sphincter. The latter is unnecessary and may cause some bleeding. To make sure that all stricture fibers are severed and a clear interval is provided between the lips of the incision thus made, a short series of Lister's metal bulbous bougies

(10 to 15, English gauge) should be successfully passed before the patient recovers from the anesthetic. The ordinary round-ended bougies are not suitable for this purpose, as they may catch in the lips of the wound. It is a matter of much importance to secure a perfectly smooth, soft scar. All metal instruments for use in connection with a strictured urethra should be bulbous or olive-headed. The bladder is then emptied of any urine it may contain and washed out with a solution of perchloride of mercury (1 in 6000) until the lotion returns quite clear. An ounce or so of the solution is left behind in the bladder, so that the first portion of the urine voluntarily passed is sterilized.

This completes an operation which need not occupy more than a few minutes. Carbolized vaselin (three grains to two ounces) is used for the instruments. The author rarely ties a catheter in the bladder unless, as sometimes happens, a chronic stricture has induced an atonic bladder, when a soft-rubber catheter may be retained for forty-eight hours or so; otherwise we may have high temperatures until the viscus is artificially emptied. With these antiseptic precautions there is seldom any marked degree of urinary fever. On the fourth or fifth day after a whip bougie is generally passed, and the patient is instructed in the use of a suitable instrument. For many years Maisonneuve's operation has commended itself to the author on the grounds of its simplicity, its adaptability to the most contracted forms of stricture, and the benign character of the scar tissue which usually results. He has therefore referred to some details to which he has learned to attach considerable importance. The extension of the antiseptic principle to these operations has in all respects greatly benefited them.

Still more rarely there are cases of stricture met with where neither dilatation nor internal urethrotomy will cover the ground the contraction occupies. Instances occur when, by reason of contraction, abscess, and fistula, the perineum and urethral wall become matted together and converted into a hard mass of dense warty-looking tissue which can be only successfully dealt with by some form of perineal section. This, however, though the cases may be comparatively few, is a subject of itself and requires a consideration which cannot be included within the limits of these remarks.

The author passes on to the third division of his classification — patients who present themselves for treatment on the ground that they are suffering from an impassable stricture. In the author's earlier days he was much impressed by the teaching of Syme, indorsed by Bickersteth, of Liverpool, in his practise, to the effect that such a term as "impassable" could only be used in a somewhat relative sense and was inapplicable unless the canal was structurally or, if he might use the term, hermetically closed, as, for instance, when a urinary fistula coexisted. Syme thus refers to this point: "There is nothing of more consequence in the treatment of stricture than knowledge of the fact that this alleged impermeability has no real existence except in those cases where the urethra has been divided by violence and allowed to cicatrize with obliteration of the passage beyond the opening at the seat of injury. It is obvious, indeed, that if the urine is permitted to pass, no matter in how small a stream, there must be room for the introduction of an instrument, provided it is sufficiently small and properly guided." This is a high ideal to take and to attempt to follow, but it puts into prominence the first principle associated with the treatment of urethral stricture, whatever form it may assume. Though we may fail to attain it, the possibility of doing so in a legitimate and scientific manner should never be lost sight of. If such a conclusion as this could have been arrived at in the time of Syme, how much more so is it within our reach in the present day, after what has been done in improving the construction of all kinds of instruments used for this purpose. Though much patience and tact are required in obtaining access to the bladder through a contracted stricture, failure, he believes, need now but rarely occur. Nor is the attainment of this a matter of indifference relative merely to the adoption of one out of two eligible courses. Experience shows that as there are strictures which need not be cut merely because they may seem in the first instance to be impassable so far as a bougie is concerned, so there are strictures which though passable in this sense are yet found to need cutting. No sufficient answer can be given to the important question that is thus raised until a stricture has been fully explored, and this he believes can be generally done. For an impassable stricture he does not think there can be any better alternative than the one associated with the name of Mr. Wheelhouse, where the contraction is sought for by opening the perineum. It

would, however, not be difficult to find many surgeons largely engaged in operative work who have never availed themselves of this proceeding on the ground that a stricture had resisted all legitimate efforts to enter the bladder along the urethra.

Correspondence.

LONDON LETTER.

By Raymond Crawfurd, M.A., M.D. Oxon., M.R.C.P. Lond.

The holidays are now close upon us, and the medical year may be said to come to a close with the meeting of the British Medical Association at Edinburgh in the last week of July. In the Section of Therapeutics was an interesting discussion on the treatment of chronic renal disease, which is particularly desirable at this time, when a revolution so to say of the traditional treatment of this disease has been brought about. Dr. Ewart has recently contributed some ingenious suggestions on this subject to the Clinical Society of London. He starts with the assumption that in most cases of tubal nephritis the disease is confined to the epithelium, and represents a condition of inveterate epithelial catarrh that should be treated on these lines. We fancy, however, that if Dr. Ewart were to carefully examine with the microscope any dozen successive kidneys of tubal disease, he would find a much greater constancy of intertubular change than he seems to suppose exists. However, this in itself should not tempt us to neglect the catarrhal factor as has been done in the past, any more than we would neglect bronchitis in a lung where interstitial pneumonia was present. Dr. Ewart regards renal edema as Nature's safeguard against fatal intoxication, and at the same time, if allowed to persist, as Nature's great difficulty and danger. Thus the edema chokes the lymphatic system, disturbs the processes of nutrition, and hinders the recovery of the kidney by blocking its drainage. Ewart suggests that if systematic drainage of the lymphatics can be insured, the kidney may be left very much to itself; in fact, he would have us regard the danger of tubal nephritis as lying in the lymphatic system rather than in the kidney. He would coax the effusion by gravity to the lower limbs, where it can be continuously drained by aseptic scarification, or by Southey's tubes; this he effects by raising the head of the bed. At the same time the edema of the upper extremities may be relieved by massage, and that of the serous sacs by paracentesis. He claims to satisfy indications of prime importance by this method, such as the constant removal of contaminated fluid, physiological rest to the kidney by opening another channel of excretion, and restoration of circulatory equilibrium. Ewart suggests that in nephritis, as in pneumonia, the inflammatory products are mainly removed by the lymphatics, and that a free lymphatic flow is for this reason a first indication in nephritis. It is difficult to negative this hypothesis, but it is a matter of common observation that a large amount of inflammatory excreta escape in the urine, so long as the lymph channels are blocked. Such a view certainly has a clinical analogy in many cases of pneumonia, in which an extensive consolidation undergoes resolution without any increase in the sputum, while in other cases the whole work seems to be done by expectoration rather than by reabsorption.

Dr. Ewart condemns the orthodox treatment of tubal nephritis: (1) Because instead of relieving edema, the tendency has been to promote its permanence; (2) because it has not supplied physiological rest to the kidney; (3) because the kidney has been provoked to diuresis when its functions were already in abeyance, while diaphoresis and purgation have drained the strength of the patient, rather than his edema; (4) because the diet most suitable to the constitutional condition of the patient has been withheld. Ewart adopts a far more liberal diet than is generally conceded, on the theory that the toxic products are constantly removed by the systematic drainage. We can confirm from experience in several cases that it is possible to keep up continuous drainage by linear scarification for weeks and even months without ill effect, provided full antiseptic precautions are observed throughout. Along with an ordinary mixed diet he allows a moderate amount of tonic wine such as Burgundy or claret for the general well-being of the patient. Again he maintains that with the reestablishment of the lymphatic circulation drugs can be used, such as digitalis, with much greater effect on the heart and kidney, and this is a proposition that every physician will indorse. Ewart suggests that uremia may be relieved by draining dropsical fluid, as it has been relieved by venesection, and with less call on the strength of the patient. Having regard

to the nature of the effused fluid, which has recently been very fully investigated by Bradford, this would seem to be probable, but such a slow method of relief could be of little practical value in any case of acute uremic manifestations. There is much in Ewart's suggestions that should be carefully weighed in the balance of clinical experience. It would certainly seem reasonable to aim at a more radical treatment of the renal block, on which, apart from the nephritis, much of the albuminuria depends, both for the purpose of restoring the excretory function of the kidney, and therewith also maybe its power to produce an internal secretion of essential value to the economy. We fancy Dr. Ewart's eyes are riveted too closely upon the kidney, and before a verdict could be given on the curative efficiency of his suggested treatment much would have to be said of the heart and of other organs.

Our indefatigable Colonial Secretary has set on foot a scheme for establishing a School of Tropical Medicine in connection with the Seamen's Hospital at the Albert Docks. Now that a large portion of the tropics is included in the Empire it is certainly proper that the medical men of the colonial service should have some facility for the study of tropical diseases, which hitherto has been completely neglected in this country. The Seamen's Hospital has long provided material from all parts of the world, and only some solid scheme is necessary to make it available for students. The school which it is proposed to found in connection with the hospital will have the advantage of Dr. Patrick Manson's knowledge of tropical diseases, and there should be no difficulty in finding adequate lieutenants among the members of the colonial service. The Colonial Office is to supply a portion of the building fund, together with the annual fees of students who propose to enter the colonial service. It is hard to see why the India Office and the Foreign Office on behalf of its protectorates in East and West Africa should not support the scheme, and supply some of the cost of maintenance. Such a school, with a well equipped laboratory and facilities for research, such as are promised, should attract students from other countries than our own.

Dr. Maclennan contributes some notes on alginic acid and some of its compounds as therapeutic agents to the July number of the *Glasgow Medical Journal*. Alginic acid is a new organic acid obtained from algæ. We are not here concerned with the uncombined acid, for which Maclennan gives the empirical formula $C_{76}H_{80}N_2O_{22}$, but rather with the compounds of the acid. The alginates of the alkalies and magnesium are soluble, but those of the alkaline earths and heavy metals are insoluble, though many may be rendered soluble by ammonia. Maclennan suggests that alginates of many of the alkaloids might conveniently be introduced into the list of official remedies. All the alginate salts have the peculiarity that they are but little acted on by pepsin, and may therefore be used when it is desired that they should pass through the stomach unchanged. The paper deals at length with alginate of iron, which is a tasteless, brown, insoluble powder, and contains a very large proportion of iron, viz., 10.92 per cent. It is best administered in the form of powder, and may be given to adults in doses of from ten to fifteen grains thrice daily. Maclennan had thus employed it in several cases of chlorosis, where there were marked symptoms of functional or organic derangement of the stomach, and found it well tolerated, when the stomach rejected other preparations of iron, such as the saccharated carbonate. The alginate seems to be free from the astringent properties of many iron compounds, which tend to produce troublesome constipation, and on the other hand seems to avert this ill consequence by its tonic influence on the intestinal muscle. Maclennan attributes the tolerance of the stomach to this compound to the fact that alginates are but slightly acted upon by pepsin. If further observation bears out these flattering accounts, we should possess in alginate of iron a compound of first-rate value in therapeutics.

Most of us at one time or another have been at our wit's end for some new suggestion in treatment to employ in cases of Graves' disease after the orthodox list of remedies has been tested and has failed. Semple speaks favorably in the *British Medico-Chirurgical Journal* of a combination of the Schott treatment with Weir Mitchell treatment, aided and abetted by drugs and careful regimen. It is hard to see how we can look for curative effects from such a combination, seeing that the circulatory disorders are only a small part of the disease. We have recently employed suprarenal extract in several cases of Graves' disease with marked benefit to all the symptoms, even the thyroidal tumor. We have no doubt that great benefit to the condition of heart-hurry and heart weakness may be thus obtained in a

very large number of cases, and if as is possible the exophthalmus and thyroidal tumor be due respectively to dilatation of the retrobulbar and thyroidal arteries, the use of so powerful a vasoconstrictor is not without support in rational therapeutics. Now that pathologists are convinced that Graves' disease is to a very large degree a psychosis, one can hardly look for cure from remedies that at best tickle the periphery, while leaving untouched the *primum mobile*—the psychical disorder—that underlies the disease. Rest of mind, freedom from worry, and allaying of the ever-present apprehension are the first essentials in treatment; rest of body, careful regimen and drugs are only useful in so far as they minister to tranquillity of mind by improving the general well-being. The very common association of rheumatism with Graves' disease is of much interest viewed along with its very common association with chorea. In the latter disease we almost certainly have to deal with disordered equilibrium of the cortical motor cells, so that they discharge in an ill-restrained manner. May it not be that rheumatism also predisposes to the psychical disorder, which consummates in Graves' disease, by this selfsame effect on the cortical cells? Of late years influenza has appeared in not a few cases as the immediate precursor of Graves' disease; may we not look to the same locality for an explanation of this conjunction? For such reasons as these we can only regard as a palliative any remedy that is not primarily directed to the relief of the central nervous disturbance.

Among books of note that have been published recently in this country we would specially call attention to a Manual of Surgery by Rose and Carters. A happier combination could not have been found than these disciples respectively of Sir William Ferguson and Lord Lister. The volume provides a very large amount of knowledge in a very succinct form and free from the faults that usually result from compression. We can heartily recommend the volume to students of all classes, and also to the general practitioner whose interest in his profession has not died with the attainment of a diploma.

Sir William Stokes, Bart., surgeon-in-ordinary to Her Majesty the Queen in Ireland, reported upon thyroidectomy in exophthalmic goitre to the recent meeting of the British Medical Association. He thought the following case worthy of record, inasmuch as it lends color to one of the many theories of the causation of this disease that have been propounded from time to time: G. D., aged thirty-two, was admitted to the Meath Hospital under the care of Dr. Craig in October, 1894. The clinical condition presented the familiar features and was definitely attributed to a fright from seeing a friend of his killed by a threshing machine. He was treated with ergotin and belladonna, and subsequently with thyroid extract. His general health became much improved, the tumor in the neck decreased in size, the eyes became less prominent, and the tremor subsided. The improvement, however, was only temporary, and he was readmitted to the hospital in May, 1896, with an aggravation of all the existing symptoms. The patient was then anemic. The thyroid was enlarged, particularly the central lobe, which was about the size of a large Tangerine orange; the lateral lobes were also somewhat enlarged. The circumference of the neck at the most prominent part of the enlargement was eighteen inches. There was a systolic murmur heard over the gland and a bruit in the vessels of the neck. The heart's action was very irregular, but not very fast, and there was a slight trace of a systolic murmur in the mitral area. This was probably hemic in character, as it was not constant and disappeared on excitement. The eyes were prominent, the palpebral orifice enlarged, and there was well marked nystagmus; neither von Graefe's nor Stelwag's signs were well marked. There was tremor, but no skin pigmentation; no local nor general edema; the urine was normal. Sir William Stokes at this stage removed the large central tumor. A smaller growth about the size of a pigeon's egg was found lying to the right, but on a posterior plane; this was also removed, and with it a portion of the right lobe of the thyroid. The only feature of special interest in the course of the operation was paroxysms of alarming dyspnea; while after the operation severe syncopal attacks accompanied by profuse sweating necessitated the constant use of diffusible stimulants. In three weeks the patient was able to leave the hospital with marked amelioration of all his symptoms. In many respects the case runs parallel to that published by Lord Lister in 1877, although there was none of that mechanical compression by the tumor which in his case threatened life by suffocation.

In reference to the therapeutics of this malady we find as great diversity of opinion

as in regard to its etiology and pathology. Professor Bruns (*Berl. Klin. Wochensch.*, 1896, p. 406) holds that it is quite exceptional for the goitre to diminish under the administration of thyroid preparations, and that under their influence the cardiac and nervous symptoms as a rule get worse. The simple hyperplasic form of goitre appears to be the one that is specially amenable to thyroid medication. Among physicians there is pretty general agreement that treatment by thymus gland is entirely useless. Dr. Hector Mackenzie finds "that the thymus gland possesses no specific action in Graves' disease. I have found it in most cases to have no effect either on the heart, on the goitre, or on the exophthalmus." The results obtained by operative treatment point distinctly, in Sir William Stokes' opinion, to the thyroid being the seat of the primary lesion. For example, Lemke, of Hamburg, who is a strong opponent of the neuropathic nature of Graves' disease, believing that the symptoms are due to toxic agencies originating in the thyroid gland, strongly advocates surgical treatment. M. Allen Starr (*Medical News*, April 18, 1896) has published a statistical record of 190 cases, a large proportion of which were permanently benefited by operation: seventy-four are reported as cured, forty-five improved, and three not benefited. He states that twenty-three of the cases died immediately after the operation, which could not be attributed either to hemorrhage or sepsis. He attributes the calamity to a poisoning of the entire system by absorption of thyroid juice during the operation. This he thinks may result from an excessive handling of the tumor during operation, from "absorption of torn vessels, or hypersecretion due to the employment of ether as an anesthetic." He suggests, therefore, that some other anesthetic should preferably be employed, and mentions cocaine as recommended by Kocher. The symptoms preceding death were those of collapse and cardiac failure.

Among other methods of operative treatment adopted in these cases mention should be made of Trousseau's suggestion of local depletion, also Jaboulay's exothyropexy, which consists in stripping the capsule from the gland and fixing the latter in the superficial wound so as to produce shrinking from exposure to air and from thrombosis of the venous sinuses. Also division of the cervical sympathetic has been suggested, and ligature of the thyroid arteries. Of drugs we may take Osler's estimate that all are "notoriously uncertain." Sir William Stokes claims in regard to the case he communicates that as two years have elapsed since the operation without any recurrence of the symptoms, the treatment adopted may be considered as successful.

Professor Mayo Robson (Leeds) read a paper on a series of cases of choledochotomy, including three of duodenocholedochotomy. He remarked that at the present time it may be confidently asserted that there is no portion of the gall-bladder, cystic, common or primary divisions of the hepatic ducts, which cannot under ordinary circumstances be reached for the removal of gall-stones, and that in operating on the gall-bladder and bile-ducts it is better to begin with an open mind, prepared for any of the various operations on the biliary passages, as it is usually impossible to say what may be required until the ducts have been explored by the fingers and the condition of the parts ascertained. After describing the various operations which may be employed for the removal of gall-stones from the common duct, he proceeded to consider some of the details of the operation — some of the said points being the placing of a sand-bag under the back before operating, which brings the common duct nearer to the surface; exploring the common duct when possible by the finger introduced through the incision in the duct so as to avoid leaving concretions; and the administration of chloride of calcium before and after operation in order to avoid the bleeding which is so apt to occur in deeply jaundiced patients.

In remarking on the prognosis, Robson said that he had operated directly for gall-stones in the common duct in forty-nine cases, with three deaths, giving a mortality of 6.1 per cent. These deaths occurred, one after cholecystenterostomy and two after choledochotomy, and in all three the jaundice had been long-continued and deep and associated with infective or suppurative cholangioitis. After cholelithotrity he had not had a death.

The author gave a table with a brief history of seventeen choledochotomies which he had performed, and concluded his remarks by saying that as experience increased he hoped and believed that the mortality in choledochotomy would be reduced to five per cent., though even if it should remain higher, it must be borne in mind that nearly every recovery is a life saved, for in the greater number of these cases of gall-stones in the

common duct death after prolonged suffering is the usual termination.

Robson also read a paper on three cases of partial hepatectomy for cancer. He remarked that out of nearly 300 operations on the liver and bile-ducts, he had operated in one way or another on thirty-five cases of malignant disease, but out of this number he had only met with three cases in which it seemed feasible to attempt complete removal of the disease by taking away the gall-bladder and the adjoining part of the liver. Of these three, one died shortly after operation from shock. The other two completely recovered from the operation, but only survived a few months before there was a recurrence of the disease. The method he had adopted in all the cases was to apply an elastic ligature below pins which transfixed the cystic duct and the liver tissue.

The author remarked that it was a curious fact that in two cases where he had closed the abdomen, thinking the disease to be malignant, and where in one case cholecystotomy had been done and in another a simple exploratory incision, complete and permanent recovery had followed. It was of course possible that these cases had not been malignant. On the other hand, the question was raised as to whether they should not come under the class of cases of cure by operation *per se*. He advised exploration in all doubtful cases, if in a condition to bear it, since in several he had found the disease, previously thought to be cancer, to be inflammatory, and the patients had been completely cured by operation.

In conclusion the author expressed the following opinions:

1. Seeing that statistics from various countries and by many observers agree in showing the frequent association of gall-stones and primary cancer of the gall-bladder and liver, it is desirable that cases of cholelithiasis should be submitted to surgical treatment at an earlier stage than has hitherto been the custom.

2. In all cases of tumor of the gall-bladder, even if unaccompanied by symptoms, an operation should be advised and the obstruction, usually a calculus, should be removed.

3. If these rules were followed, primary cancer of the gall-bladder and liver would probably be less frequent.

4. If early operation in cases of tumor of the gall-bladder were followed out, even if primary cancer had commenced, it could be caught in an incipient stage, when a complete cure by partial hepatectomy might be reasonably hoped for.

5. An exploratory operation, even in a patient seriously ill with a localized tumor in the gall-bladder region, is worth advocating though malignant disease be feared, in the hope that the disease may be inflammatory and so capable of relief.

6. If there are any secondary nodules in the liver, or if adjoining viscera are invaded, the operation had better be terminated as a simple exploratory one.

PARIS LETTER.

By A. R. Turner, M.D. (Paris).

Ever since the discovery by Eberth and Gaffky of the microbe of enteric fever pathologists have endeavored to bring about cases of infection in animals by the administration of the germ by the mouth. Not long ago Sanarelli, after having treated various animals with the toxin of enteric fever, had come to the following conclusions, namely, that the pathological alterations to be found on the surface of the intestine in this affection are not directly caused by the microbe, but are the result of its toxins—*i.e.*, the bacillus taken into the system causes necrosis of Peyer's patches by means of its toxin.

Professor Chantemesse, of Paris, who has devoted much time to the consideration of the question of enteric fever, and Dr. Ramond, former house physician of the Paris hospitals, seem to have succeeded in infecting animals with enteric fever. In a first series of animals they sprinkled the food with a virulent culture of the bacilli. Twelve rabbits treated in this way showed mild symptoms of infection. They all recovered in from fifteen to eighteen days. It is necessary, however, to lower the resistance of the animals, which may be done by injecting daily three or four cubic centimeters of blood serum taken from men who have never suffered from enteric fever. Another method consisted in the injection of fifty drops of laudanum into the peritoneal cavity a few minutes before the ingestion of the bacilli. Cultures of the bacilli may not only be mixed with the food, but may be passed directly into the stomach by means of a rubber tube.

Shortly after the administration of a recent culture the animal's temperature would rise to 40° or 41° C., and it would lose its appetite. Its weight would soon fall about 150 to 200 grammes. The temperature, after the

first rise, would remain but a few tenths of a degree above the normal, but on the twelfth day would again suddenly rise to 40° C. and remain high for about fifteen days. During this period not only would the appetite be diminished, but some irregular diarrhea would be present, while the respiration would be slower. No albumen was to be found in the urine.

The animal would lie more or less huddled up, with its eyes half closed and its ears hanging down. In some cases a rapid recovery took place, but in a few others the animal died from peritonitis or typhoid septicemia. In other cases the symptoms were slight, consisting only in some fever, diarrhea, and loss of flesh. At the beginning of the second week a distinct sero-reaction was to be noted, lasting two months after recovery.

Autopsies of the animals deceased revealed pathological alterations similar to those found in enteric fever, namely, congestion and infiltration of Peyer's patches, with slight traces of hemorrhage. Some well defined ulcerations were present; the mesenteric lymphatic glands were found swollen; the spleen was enlarged and dark, and the liver was congested. Broncho-pulmonary and pleural lesions were of frequent occurrence.

Microscopic examination revealed the presence of bacilli in the follicles of the intestine, where they were extremely abundant; more deeply they seemed to tend to break up into granules. Some succeeded in reaching the mesenteric glands, where the sinuses were filled with them, grouped infrequently into masses of twelve to fifteen bacilli, surrounded by amorphous substance.

Drs. Chantemesse and Ramond were led to conclude from these experiments that in enteric fever in animals there occurred first of all a lymphatic stage, corresponding perhaps to the incubatory period. In this stage the bacillus invades the follicles and gets as far as the mesenteric glands. In a second stage, of short duration, general circulatory infection occurs, followed by localization in the spleen and liver—the visceral stage.

It was noted that the infection did not act to any great extent upon the kidneys, a fact due to the disease being less virulent in animals, and to the uncommonness of secondary infections which affect the renal functions much more than does the toxin of enteric fever. Such a condition is seen to a certain extent in children suffering from enteric fever, as they are less exposed than adults to secondary infections.

The Fourth Congress on Tuberculosis was held in Paris from July 27 to August 3. The members of the Congress were taken over the Boucicaut Hospital, the recently opened establishment built thanks to the endowment furnished by Madame Boucicaut, the late proprietress of the Bon Marché. They inspected the wards for tuberculous patients, and Dr. Ribard, one of the physicians of the hospital, explained his treatment for anorexia in tuberculous patients. It consists in applying two kilogrammes of carbonic acid snow to the pit of the stomach or over the liver just before meals. The snow is enclosed in a bag and surrounded by a thick layer of wadding.

The first meeting was held in the great amphitheater of the Faculty of Medicine, at three o'clock in the afternoon of July 27. Dr. Nocard, a veterinary surgeon, who was president of the Congress, spoke at length on the necessity of stringent regulations against bovine tuberculosis, and called attention to the results obtained in Denmark, where tuberculosis had been so prevalent among cattle.

Dr. Petit, secretary to the Congress, spoke of the results achieved since the previous congress. In the public schools some efforts had been made to place spittoons in the halls and stairways, and to prevent pupils from expectorating on the floor. So far declaration of cases of tuberculosis by the physician has not been made obligatory, and it is not likely to be made so, from the fact that such a measure was not advocated in the recent report published by the Academy of Medicine. In some of the hospitals wards specially reserved for tuberculous patients have been opened. The speaker called attention to the societies founded in other countries, the Red Cross in Berlin, and to the aid given them by the Empress Mary of Russia, the Czar Nicholas II, the Kings of Denmark and Sweden. Dr. Petit ended his speech by thanking the members of the Congress for their presence.

Two of the most important communications made to the Congress were a report by Dr. Landouzy, Professor of Therapeutics at the Faculty of Paris, on the treatment of tuberculosis by serums and toxins, and a report on the "Hospitalization of Indigent Tuberculous Patients in Paris," by Dr. Letulle, one of the physicians of the Boucicaut Hospital.

Dr. Letulle began by declaring that it was a fact that tuberculous patients without means were treated in Paris with a well-

nigh complete lack of the hygienic precautions necessary in such cases. He called attention to the fact that the means used to prevent the spread of tuberculosis, namely, isolation and disinfection, were not only capable of resisting its extension, but contributed likewise to arrest its progress in patients already suffering from it. By the installation of special wards for tuberculous patients the treatment could be modified; the quantity of air for each patient was increased; no supplementary beds were allowed, nor the use of brooms or dusters; in brief, the causes of secondary infection were put aside.

In November, 1897, Dr. Letulle reserved two wards, containing in all thirty-five beds, for tuberculous patients. During a period of eight months 125 patients were treated. Thirty-eight deaths occurred, sixty cases grew worse, and twenty-seven cases increased in weight and showed improvement. The patients were weighed every week at a certain hour, and in some cases an increase of from four to ten kilogrammes was noted. Dr. Letulle thought that these encouraging results were due to a treatment based on two principles. The first consisted in rigorous asepsis of the service. This should be more stringent than in surgical wards even, as the patients are more liable to infection. Spittoons were placed everywhere. No ordinary handkerchiefs were allowed; they were replaced by sterilized compresses. The patients were bathed and cleaned before entering the wards. In brief, the only danger left was due to visits from friends and relatives. The second principle of the treatment consisted in good air, rest, and good food.

The windows of the wards were open night and day. These windows are divided into three parts, and the upper part only was left open at night. The patients were kept out-of-doors as much as possible. Two tents have been placed in the garden, containing inclined chairs, and the patients are sent out from half-past five to nine o'clock in the morning, and from half-past five to nine in the evening. When the sun is not too hot, the patients were sent out from 12 M. to 5 in the afternoon.

So far the cure by suralimentation has been rather elementary in the Paris hospitals. The patients were given the first, second or fourth degrees of diet according to their condition, and in certain cases milk, fresh eggs, raw or powdered meat were added. A change has been brought about at the Boucicaut Hospital, and the patients now have five meals a day. The relatives and friends of the patients are requested to leave off bringing sweets, and a list is furnished them showing what articles of food they may bring.

Dr. Vitaliani recommends a simple and efficacious means of treating blisters caused by badly fitting shoes. The blister should be incised from end to end, and when the serosity has disappeared, a little iodoform should be dusted in by lifting up each flap of the blister. A small quantity of absorbent cotton should be applied and kept in place with some adhesive plaster. The patient can then put on his shoe and continue walking. In less than a day the wound has dried and there is a new layer of epidermis.

BERLIN LETTER.

By James J. Walsh, M.D., Ph.D.

Two things were of interest from a therapeutic standpoint in Professor Koch's talk on the spread of the bubonic plague. His thorough confidence in the preventive therapeutics of modern quarantine, now that we know exactly whence to look for the danger, and his description of the portion of the Uganda country in which the plague has been endemic for so long as tradition runs, is worthy of note.

Koch does not think that there is any serious danger now of the plague ever again overrunning civilized countries. The conditions of its contagion are such that with reasonably sanitary surroundings, ordinary quarantine regulations will always be sufficient to protect civilization from invasion. Mesopotamia, Thibet and the Arabian coast just below Mecca were the real plague spots where the disease was known to be endemic; to these are now added the Uganda country on the northern shores of Lake Victoria Nyanza, hitherto unsuspected in this regard, but from which undoubtedly epidemics have come down the Nile to invade Europe. From here doubtless Tripoli received the germs of the fatal epidemic of the early seventies, the origin of which has been hitherto a mystery. If a jealous eye is kept on these regions Koch thinks there need never be fear of another great epidemic.

The part of Central Africa in which the plague is endemic is in the midst of the banana groves of the Uganda country, not far from the shores of Lake Victoria Nyanza.

The people live practically exclusively on bananas. Their huts are in banana groves so thickly overgrown that scarcely a ray of light penetrates and the ground is always damp. The air is overloaded with moisture. The groves are infested with innumerable rats. Here are all the conditions favorable for the development of lower plant life in a luxuriance that may easily change the character of it from harmless to harmful. The presence of the rats gives a preliminary host to still further increase the virulence of the micro-organism. For the plague is a rat disease, not a human disease. These usually intensely resistant animals succumb to it at once. Mere contact communicates it to them, while other animals must be inoculated with it. Men are only secondarily the victims, after the passage of the virus through animals has increased its virulence.

I have heard two authoritative statements recently that seem to show that after the recent period of pathological interest in the gonococcus, that finally placed that eminently disagreeable being on a pinnacle of etiological activity beyond that of most other microbes in the extent and severity of the pathological changes it could induce, the inevitable reaction is setting in. These two statements set it in a much lower plane of virulence than even ordinary pus microorganisms. Professor Lassar stated that he had never seen an epididymitis occur in a case of gonorrhea that had not been treated. To his mind the complications of gonorrhea that occurred three to five weeks after infection, but especially the epididymitis, were the result of secondary infection. How that secondary infection was acquired was easy to explain. Patients absolutely without an idea of asepsis were furnished with a syringe, for using which they were given no directions as to cleanliness, often not even warned of the danger of uncleanliness. Injections were given by patients in all sorts of out-of-the-way places, usually the very opposite of aseptic in character. The syringe and solution for injection were carried around in the pocket, and usually there was no chance to even wash the hands before administering the injection. It is foolish to think that under such circumstances, because the solution is an antiseptic, the patient is free from the danger of secondary infection. Antiseptics as injected into the urethra were always so weak as to scarcely affect microorganisms, unless allowed to act during long periods, and were usually such as were supposed to have a value because especially inhibitory to the gonococcus.

The other statement was from Professor Gusserow's assistant at the Charité, Dr. Volkmann. In discussing the causes of uterine bleeding, during a discussion at a meeting of the Charité Aerzte, he called attention to the fact, insisted on by Sänger, that a gonorrheal oophoritis is often accompanied by menstrual disturbances, the periods becoming more frequent and more blood being lost. Gynecologically he considers this to be of the greatest importance, for infection with the gonococcus practically never leads to peritonitis, and the lesions gradually undergo a process of involution that makes them harmless. If, then, a patient comes with a history of bleedings after the recurrence of symptoms of a gonorrhea and her ovaries be found affected, there will scarcely be question of surgical interference in the case, for as a rule Nature is well able to take care of the patient in the matter.

The Pasteur treatment for rabies was begun in the Institute for Infectious Diseases, Professor Koch's department at the Charité, in the beginning of July. Eight cases were under treatment during the first month. As Professor Brieger (Professor Koch's assistant) says, there was evidently need for the new establishment. He says that the statistics from Russia and from Austria, where national feeling has no weight in the matter, amply justify the claim that the Pasteur treatment is an effective therapeutic method. One thing is now certain, viz., that the treatment is absolutely harmless. As Berlin has been the great stronghold of opposition to the Pasteur treatment, and especially emphatic as to the danger of communicating the disease it was supposed to cure, it would seem that the last word in the chapter of opposition to Pasteur's great discovery has been written. The introduction of the treatment at Berlin will be the signal for each of the German universities to establish a Pasteur institute, and the new century will find the treatment in universal use.

One of the abominations that one does not have persistently forced on his attention over here is the chewing of gum. Professor Ewald, however, recommends it as a therapeutic measure in certain stomach diseases, not because of any supposed minimal pepsin addition, but for its mechanical action in causing a superabundant flow of saliva. In certain nervous states accompanied by an excessive secretion of hydrochloric acid, the

flow of alkaline saliva tends to neutralize the acidity and so do away with a number of symptoms, like continuous urgent hunger, relieved only for a short time by taking food, that occur in gastric hyperchlorhydria.

LETTER FROM THE FRONT.

By Edward Martin, M.D.

To the Editor of the Therapeutic Gazette.

Sir: When, at the beginning of the present war in the latter part of April, the State troops were ordered out, those from Pennsylvania, about eight thousand strong, were sent to Mt. Gretna, a high, well watered region near Harrisburg. The Philadelphia regiments, presumably the least accustomed to stress of weather, moved out on the morning of a cold wet day, the snow which fell early changing to a heavy rain later. Some of them, after an all day railway journey, were compelled to bivouac for the night, neither ground nor tents being assigned to them sufficiently early to allow of shelter being provided. These troops were improperly shod, inadequately clothed, and somewhat irregularly fed; they were taken in part from workshops and from sedentary occupations; they were exposed to many days of cold, almost ceaseless, rain, transforming the camp into a sea of mud; the nights were always cold, frost falling at times. With these conditions obtaining, many not too robust, house-softened men, always with wet feet, generally with wet clothing, always cold at night, given food to which they were not accustomed, the regimental surgeons naturally looked to having their hospitals full of men seriously ill with rheumatic affections, particularly acute articular and muscular rheumatism, and acute congestions from surface chilling, particularly bronchitis, pneumonia, and diarrhea.

To the surprise of every one there was almost no sickness of any kind, far less than I have ever known in any summer encampment. I believe the reasons for this were: (1) The stimulating effect of the excitement incident to the beginning of actual war, and the daily expectation of orders to move; (2) the bracing effect of the fresh mountain air; (3) the coolness of the weather—northern men always stand cold better than heat; (4) the simple diet—there were almost no booths selling ice cream, milk shake, soda water, and fruit, always prolific sources of camp diarrhea. After about two weeks of cold, wet, and discomfort, but generally of excellent health, a portion of the troops were ordered to Chickamauga, Ga. This also is in a mountainous region, but is hot in the day and dry, absolutely no mountain springs running through it, dusty beyond all experience elsewhere, cools rapidly at night but does not become actually cold, with the deposition of a dew so heavy that as it dropped from the trees upon our tent roofs it sounded as would a beginning rain-storm. The water-supply here was surface water—*i.e.*, was pumped from wells twenty or thirty feet deep. Some ran deeper, but were not true Artesian wells. The food issued was more irregular than ever before, and the water was so inadequate in quantity that there were constant quarrels about the wells. The heat during the day was so intense that one of our men was sunstruck, and nearly every morning and evening drill saw many instances of heat prostration. Moreover, the mixed soft drink and fruit wagon and stand abounded.

Medically our troubles began at Chickamauga. On the night of our arrival the men were compelled to bivouac, the train getting in too late to allow of reaching the camping ground and putting up canvas. Everything exposed to the dew was nearly as wet as it would have been had there been rain. The next morning was close and very hot, and after a light breakfast, mainly of coffee, the regiment was taken in heavy marching order (this means each man carrying about sixty pounds) to the camping ground about two and a half miles away. The route was over a road several inches thick with dust. It was at the end of this march that the case of sunstroke occurred, also a number of cases of heat exhaustion. On the following morning, at sick call, in place of the four or five men who had been coming, with slight injuries or ailments, I found some forty or fifty men. Nearly all of them were suffering from a harassing cough. The physical signs, those of a slight bronchitis, were by no means commensurate with the severity and persistence of the cough; there was little or no fever, no diminution of the appetite, a distressing sore throat, tenderness on swallowing, inconspicuous faucial lesions, soreness and rawness along the line of the trachea, much abdominal soreness (from the incessant cough, which greatly interrupted sleep), and no pulse hurry. This was the type of an epidemic which made no great headway but which yielded not in the slightest to the ordinary sedative treatment. They were given "Brown mixture" alone, or ammonium muriate, pare-

goric, opium, laudanum, codeine sulphate, morphine sulphate, sodium and potassium bromide, Dover's powder, gargles (astringent, antiseptic, and sedative), sprays and inhalations, without the slightest effect. Copaiba and sandalwood were equally inefficacious. The first obvious improvement followed the free use of counter-irritation to the chest, along the line of the trachea, and to the neck. This was accomplished by mustard plaster and tincture of iodine. Finally we struck upon the following formula:

℞ Terebene,
Oil of eucalyptus, āā ʒ j;
Syrup of yerba santa, ℥ j.
M. S.: One teaspoonful every two or three hours.

The effect was prompt and thoroughly satisfactory; in three days the camp became fairly quiet at night, and by the end of the week there lingered only a very few cases, all rapidly growing better.

Toward the end of our stay in Chickamauga the men began to suffer from diarrhea, usually, but not always, traceable to fruit-eating or taking of large quantities of iced drinks immediately after drill. At Chickamauga the most troublesome illness was undoubtedly a harassing inflammation of the mucous membrane of the throat, larynx, and larger bronchial tubes. This was due to: (1) The dust made by the heavy hauling over the fine park roads; the air was constantly full of it, and it formed an impalpable powder rendering everything filthy. (2) The sudden contrast between the hot days and the cool, wet evenings. Fewer colds were contracted after we insisted on the men putting on their blouses at sunset.

The surface water supply should have given trouble particularly after the ground had been camped on for some weeks, but up to the time of our leaving (the end of May) it had not done so, for but one case of typhoid fever developed. In the beginning of June we were ordered to Tampa, famed even in song as a breeding-place for fever.

The camps were pitched in a sandy soil, were partly shaded by a thin growth of pine, and were in the main near enough to the water to enable the soldiers to bathe regularly. The usual disposition of all waste about a camp, including in this term the feces, of which there will be daily about a half ton to a regiment, is to bury it. Even before the tents are put up and as soon as the location of the camp is definitely determined and the company streets are marked out, there is dug at least twenty yards behind the line of kitchens a series of trenches ten feet wide and three to four feet deep and twenty feet long, for each company, to receive the feces. These trenches are usually provided with a log or scantling seat and are often partially screened by pine branches or bushes. Similar provision is made for the officers at their end of the camp. Near each cook-shed, one to a company, a hole is dug about four feet square and the same depth; this is to receive the kitchen refuse, at least all that is not burned—no rubbish of any kind is allowed about the camp or its environs. The pits for refuse of all kinds are covered at least twice a day. In my own camp there was provided a shovel at each pit, and the moment anything was dropped in it was covered with a shovelful of sand; this entirely did away with the disagreeable odor which usually characterizes garbage holes, and materially lessened their danger as breeders of flies. When the pits are covered to within two feet of the surface they are piled up level and new ones are dug. It is evident that when the surface water from or near the camp is not used for drinking purposes this provides an easy, excellent and safe means for getting rid of the feces and garbage. In low-lying regions the water is often found within two feet of the surface; the pit system then becomes troublesome and dangerous, since new trenches must be dug daily and the layer of earth overlying the excrementitious materials is not sufficiently thick to prevent the escape of offensive gases.

In large camps the water is commonly supplied by pipes bringing it from a distance and running somewhere near the line of company kitchens. This was the case at Tampa. The Plant system hauled part of their water, the larger part; the rest was piped to the soldiers from a spring. It contained much iron, turning a tumbler yellow on standing, but after boiling and filtration it was good. The evil taste and appearance of the water, however, induced many of the soldiers to seek what they deemed a better and safer supply from some of the many surface wells. This they did at first in spite of orders, and to their ultimate disadvantage.

The conditions confronting us at Tampa were: (1) A tropical climate, but with the water so near that the nights were nearly always breezy and cool. The dewfall was slight. (2) A sandy soil with the water so near the surface that in some locations the trenches could not be dug more than two feet deep. (3) The proximity of large fresh-

water ponds. (4) An adequate and healthful water-supply, but so unpleasing to the eye and taste that there was a tendency on the part of the privates to prefer the better looking water from shallow wells. (5) A city in which there is always some typhoid and malarial fever. (6) Drinks of all kinds fairly accessible, fruit abundant, cheap, and bad.

The causes of disability we could fairly expect to be most prominent were heat exhaustion and sunstroke during the acclimating drills, malarial fever, diarrhea and dysentery, later typhoid fever.

With the exception of heat exhaustion, of which we had but few cases, and sunstroke, of which we had none, our expectations were fairly fulfilled. After the first week, when every one was buoyed up by the hope of going immediately aboard transports, there was a rapid increase in the number of men reporting for relief from duty. In over ninety per cent. the affection was diarrhea, sometimes painless, often attended by severe, occasionally by agonizing, cramps, usually afebrile, accompanied only exceptionally by nausea and vomiting, attended by great weakness, especially when there was accompanying fever, yielding rather slowly to treatment unless this was accompanied by rest in bed. In a command of six hundred men there would be sixty of a morning presenting these symptoms. A smaller number would give a history of violent straining and the passage of blood-stained mucus.

The treatment which gave the best results in these cases was: (1) Entire abstinence from everything but water or tea for one, two or three days; (2) rest in quarters or in hospital, the latter always when the affection persisted more than two days; (3) the wearing of a belly-band, preceded by a large mustard plaster; (4) the immediate administration in cases of moderate pain of tincture of ginger half a drachm, subnitrate of bismuth half a drachm; when the pain was severe chlor-anodyne or chlorodyne fifteen minims, when it was agonizing a hypodermic injection of a quarter of a grain of morphine. In all cases salol was given commonly associated with oil of peppermint and bismuth, small doses being repeated hourly; commonly we gave four grains of salol and thirty grains of bismuth subnitrate every two or three hours, often combining the bismuth with ginger. When there was much nausea and vomiting we gave calomel and soda, a sixth of a grain of the former and two grains of the latter, hourly, for six doses. In the very beginning of a severe attack we had excellent results from chlor-anodyne or chlorodyne fifteen minims and castor oil one ounce. The regular army prescription, camphor and opium pills, we used but little and always in conjunction with intestinal antiseptics, holding that the diarrhea was usually eliminative and that the first effect to be produced was to disinfect the fermenting gastric and intestinal contents. We also counseled the men to vomit the moment they felt the beginning of an acute indigestion.

A part of the diarrhea we could directly trace to an inordinate consumption of green coffee, a part to a not sufficiently varied diet, but most of it to the fruit and iced drink stands which sprang up like mushrooms about the camp. The errors in diet were in the main corrected, the fruit stands included, when there resulted a marked and immediate diminution in the number of cases of acute diarrhea and gastro-enteritis. Later in the summer, after the troops had been in Tampa for upwards of a month and the rainy season had fairly started, the malarial and typhoid fevers became unpleasantly prominent. There was comparatively little of the typical malarial attacks characterized by periodically recurring chill, fever, and sweat, with an intervening afebrile period. The fever was remittent in type, was accompanied by marked gastro-enteric disturbances, often by an obstinate diarrhea, was at times intractable to quinine, and in a few instances resulted fatally. The usual treatment was pursued—*i.e.*, the use of calomel to disinfect and clean the gastro-intestinal tract, followed by quinine. The fever yielded, but on returning the soldiers to duty would recur. The typhoid fever was severe in type. It was certainly contracted from well-water, either obtained in camp because of its supposed purity, or given to the men by some of the many venders of soft drinks. It could perhaps have been prevented. The means naturally suggested in the light of this experience are:

1. The further education of the troops through their company officers as to the importance of drinking only boiled water.

2. Careful attention on the part of the company officer to the securing of means by which the water for drinking may be regularly boiled and stored, and daily inspection of the reservoirs by the medical officer made.

3. Either the abolition of all soft drink stands or a daily medical inspection of them

so that only boiled water and artificial ice may be used.

4. The constant guarding of all wells, springs or other sources of water-supply than those provided for the camp and known to be pure, as a further means of preventing typhoid fever or at least of preventing the gastro-enteric congestion which seems to favor its development; the unguarded use of ice water or of iced drinks of any kind should be forbidden, except for storing purposes and in cases of sickness. The troops would be better without ice. The large quantities of very cold water taken when the men come in hot from drill were responsible for many cases of acute diarrhea.

It is probable that could the troops be trained to drink only boiled water, not only would typhoid fever disappear from among them, but malarial fever would become much less frequent. With the advent of Artesian drinking-water through the South the severe forms of malaria previously prevalent are disappearing, thus showing that the malarial poison is often taken into the system with the drinking-water.

One of the stirring scenes of the camp was the coming in of the *Cherokee* with between three and four hundred of the soldiers who had been wounded in the fighting about Santiago. None died on the voyage over and very few afterward. The great majority recovered promptly and without suppuration. The Mauser bullet, about thirty caliber, is an exceedingly merciful one. The wounds made by it I saw when about nine days old; they were small, mostly healed and slightly scabbed punctures looking much like a scratched and scabbed mosquito bite. The wound of exit was not in the least different from the wound of entrance; there were no evidences of that explosive force which the modern projectile is supposed to exhibit at short and long range, and which our own Krãg-Jorgensen rifle bullet certainly does exhibit in experiments on the cadaver. Some men were shot at forty yards, some at twelve hundred; the wounds looked the same. In a number of instances the balls had remained in the tissues and had been extracted. Two patients whom I saw were shot directly through the lung. One spat blood for a day, but he was also shot at the same time through the neck and the floor of the mouth by the same ball, he says; the other had no bloody expectoration. These men were walking about with healed wounds. All the wounded seemed strong and cheerful. There was a striking absence of the hospital facies and the feeble bearing to which we are accustomed in patients who are hurt and who are taken to our city hospitals. From surgeons on the field who had dressed hundreds of the wounded I learned: (1) There was almost no evidence of an explosive action of the Mauser bullet; it generally made a clean-drilled hole, going through all tissues, even bone, without shattering it. (2) When it hit a man it usually stopped him; this was not always the case. (3) There were some cases shot through the head and some shot through the belly which recovered. (4) The killed were hit in a vital part, the brain or head, or a great blood-vessel; many were torn by shrapnel or the missles from rapid-fire guns. The proportion of wounded men to killed was very large. (5) There was very little hemorrhage either primary or secondary. (6) There was almost no operating other than that having for its object the cleansing and dressing of wounds. There were not more than a dozen amputations in all. (7) There was very little systemic shock from the Mauser bullet wounds. When a first-aid dressing was promptly applied the healing was usually without suppuration.

The value of this first-aid dressing of sterile gauze, one of which was carried by every soldier, was in part demonstrated by two suppurating cases, neither of which had had it applied. Though experimentally it cannot be shown that a bullet track is not sterile, practical experience proves that providing further infection can be kept out the track is likely to heal by first intention; the speedy way in which the wounds treated by the first-aid packets provided by the Army healed should do much to strengthen the confidence in them, which has been gradually weakened as a result of laboratory experiment and theoretical objections. A few of the wounds were inflicted by the Remington 45 brass-jacketed bullets used by the guerillas; these formed large suppurating tracks very different from that which marked the course of the Mauser bullets.

UNTOWARD EFFECTS OF CINCHONIDINE SALICYLATE.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: Being unable in any of the books and journals at my disposal to find any mention of the untoward effects of cinchonidine salicylate, I think the following case that occurred in my practise recently is worth reporting:

Mrs. L. D. H., aged fifty, retired nurse, was suffering from an attack of neuritis which affected the median nerve of the right arm. Owing to the fact that her stomach had been most irritable for several years, and that the most simple article of food often upset it for days at a time, I tried to relieve the neuritis by external means rather than take the chances of upsetting the stomach, which under treatment was behaving fairly well.

No effect being had from the applications, I determined to use cinchonidine salicylate. Accordingly she was ordered ten grains of the drug three times a day. June 19, at 10.30 A.M., she took the first powder. An hour afterward she began to "feel queer," her head buzzed, and some nausea was present. As she felt much better after dinner she took another powder (at 2.30). About one hour later her head began to ache, vertigo became marked, the eyes watered profusely, a most severe pain affecting the face, jaw and limbs set in, and there was slight blurring of the vision. The patient felt very weak and relaxed. The bladder soon became a seat for the pains; urination became frequent, only a small amount of clear, almost colorless urine being voided each time; there was also a constant sense of fulness in the bladder.

At four o'clock the pains were so severe that she went to bed, and a short time afterward the face became so much swollen that she could not open her eyes. Nausea persisted until midnight, when she slept for nearly an hour. About noon the following day the pain in the head and face ceased, and the swelling had gone down somewhat. The bladder trouble continued, however, and on June 29 there was still some discomfort in that organ, but urination was less frequent.

One week from the time the powders were taken the swelling had disappeared, and the vision was as good as ever. As I did not see the patient during the acute attack I am unable to make any report as to the condition of the heart and pulse at that time.

Yours truly,

HENRY J. WALCOTT, JR., M.D.

BARRE, MASSACHUSETTS.

APOCYNUM CANNABINUM.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: I wish to call your attention to a further point or two on *Apocynum Cannabinum*, concerning which you publish a letter from T. S. Dabney, M.D., in your June issue, referring to the same subject in the April issue. Dr. Dabney seems desirous to place the prior use of this remedy where it belongs, so I wish to give the wheel another turn backward.

Dr. John M. Scudder, of Cincinnati, Ohio, writing in March, 1865, of this plant, says: "In atonic or passive dropsy it is the best remedy I have ever employed — in fact, so great has been the success attending its use, that I have almost looked upon it as a specific. It makes but little difference where the effusion is, whether it is edema, anasarca, ascites, or hydrothorax, it seems to reach the lesion upon which the effusion depends, checking it, stimulating absorption, and removing the water by way of the kidneys. I have successfully treated all these forms of dropsy with it.

"In the treatment of hydrocephalus we have abundant evidence that it is about the only remedy upon which we can depend. A considerable number of cases are reported in which the disease was fully developed, and in which its use was followed by entire removal of the dropsical deposit and restoration to health. I have used it in acute hydrocephalus with marked advantage; it checks irritation of the brain, increases the secretion of the urine, and checks diarrhea.

"It is especially useful in disease of the spinal cord, in which there is irritation of the excito-motory system. In children we occasionally see a case in which there is marked spinal lesion, with a doughy, pallid skin, puffiness of the eyelids and other parts, and occasionally marked edema. In these cases the apocynum exerts a decided curative influence; the improvement being speedy, and continuing to complete restoration of health."

Dr. Scudder used from one drachm to one ounce of a good tincture to four ounces of water, and gave a teaspoonful of the mixture at a dose.

In a work on materia medica, written by the same author, and published in 1870, he says he has used *Apocynum Cannabinum* in the above named conditions during the past eighteen years, having learned its use from his teachers and predecessors, who ordinarily made a decoction of it.

My preceptor used it before and at the time I was studying in his office, and I myself have now used it nearly twenty-five years, and have found it an extremely valuable remedy when exhibited in proper cases.

Very truly yours,

C. L. GREGORY, M.D.

YREKA, CALIFORNIA.